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THE ABRIDGMENT.

MESSAGE

FROM THE

PRESIDENT OF THE UNITED STATES

TO THE

TWO HOUSES OF CONGRESS

AT THE BEGINNING OF THE

SECOND SESSION OF THE FIFTY-SEVENTH CONGRESS,

WITH THE

REPORTS OF THE HEADS OF DEPARTMENTS

AND

SELECTIONS FROM ACCOMPANYING DOCUMENTS.

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PREFACE.

This work is authorized by section 76 of the act of January 12, 1895, and is compiled and edited under the direction of the Joint Committee on Printing.

In compliance with the order of the President, directing that Government publications be reduced in length wherever possible, the Abridgment for 1902–3 has been confined to a single volume. The shortened reports of the War and Navy Departments following the restoration of peace in the Philippine Islands, and the general observance of the President's order in regard to brevity in annual reports, have made it possible to reduce the Abridgment to one volume, and at the same time to carry out the original idea of the work, which was that it should include the reports of the heads of the Executive Departments with selections from the accompanying papers.

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TABLE OF CONTENTS.

	Page.
MESSAGE OF THE PRESIDENT	7–29
REPORT OF THE SECRETARY OF THE TREASURY	31–93
Treasurer	94–135
Director of the Mint	135–178
Comptroller of the Currency	178–211
Register of the Treasury	211–226
Commissioner of Internal Revenue	226–232
REPORT OF THE SECRETARY OF WAR	233–290
Documentary History of the inauguration of the Cuban Government	291–305
Adjutant-General	306–348
Inspector-General	348–366
Judge-Advocate-General	366–371
Quartermaster-General	372–389
Commissary-General	389–410
Surgeon-General	410–432
Paymaster-General	433–442
Chief Signal Officer	442–475
Chief of the Record and Pension Office	475–482
Chief of Engineers	483–494
Chief of Ordnance	494–514
United States Philippine Commission	514–520
Civil Governor of the Philippine Islands	521–544
REPORT OF THE ATTORNEY-GENERAL	545–570
REPORT OF THE POSTMASTER-GENERAL	571–593
Assistant Attorney-General for the Post-Office Department	594–600
First Assistant Postmaster-General	600–630
Second Assistant Postmaster-General	630–655
Third Assistant Postmaster-General	655–684
Fourth Assistant Postmaster-General	684–716
REPORT OF THE SECRETARY OF THE NAVY	717–751
Chief of the Bureau of Yards and Docks	752–761
Chief of the Bureau of Equipment	761–768
Chief of the Bureau of Navigation	769–793
Chief of the Bureau of Ordnance	793–820
Chief of the Bureau of Construction and Repair	820–835
Chief of the Bureau of Steam Engineering	836–856
Paymaster-General	857–863
Surgeon-General	863–874
Commandant of the Marine Corps	874–886
REPORT OF THE SECRETARY OF THE INTERIOR	887–1050
Commissioner of the General Land Office	1051–1068
Commissioner of Indian Affairs	1068–1080
Commissioner of Patents	1080–1083
Commissioner of Pensions	1084–1094
Commissioner of Railroads	1095–1099
Director of the Census	1099–1104
REPORT OF THE SECRETARY OF AGRICULTURE	1105–1220

MESSAGE.

To the Senate and House of Representatives:

We still continue in a period of unbounded prosperity. This prosperity is not the creature of law, but undoubtedly the laws under which we work have been instrumental in creating the conditions which made it possible, and by unwise legislation it would be easy enough to destroy it. There will undoubtedly be periods of depression. The wave will recede; but the tide will advance. This Nation is seated on a continent flanked by two great oceans. It is composed of men the descendants of pioneers, or, in a sense, pioneers themselves; of men winnowed out from among the nations of the Old World by the energy, boldness, and love of adventure found in their own eager hearts. Such a nation, so placed, will surely wrest success from fortune.

As a people we have played a large part in the world, and we are bent upon making our future even larger than the past. In particular, the events of the last four years have definitely decided that, for woe or for weal, our place must be great among the nations. We may either fail greatly or succeed greatly; but we can not avoid the endeavor from which either great failure or great success must come. Even if we would, we can not play a small part. If we should try, all that would follow would be that we should play a large part ignobly and shamefully.

But our people, the sons of the men of the Civil War, the sons of the men who had iron in their blood, rejoice in the present and face the future high of heart and resolute of will. Ours is not the creed of the weakling and the coward; ours is the gospel of hope and of triumphant endeavor. We do not shrink from the struggle before us. There are many problems for us to face at the outset of the twentieth century—grave problems abroad and still graver at home; but we know that we can solve them and solve them well, provided

only that we bring to the solution the qualities of head and heart which were shown by the men who, in the days of Washington, founded this Government, and, in the days of Lincoln, preserved it.

No country has ever occupied a higher plane of material well-being than ours at the present moment. This well-being is due to no sudden or accidental causes, but to the play of the economic forces in this country for over a century; to our laws, our sustained and continuous policies; above all, to the high individual average of our citizenship. Great fortunes have been won by those who have taken the lead in this phenomenal industrial development, and most of these fortunes have been won not by doing evil, but as an incident to action which has benefited the community as a whole. Never before has material well-being been so widely diffused among our people. Great fortunes have been accumulated, and yet in the aggregate these fortunes are small indeed when compared to the wealth of the people as a whole. The plain people are better off than they have ever been before. The insurance companies, which are practically mutual benefit societies—especially helpful to men of moderate means—represent accumulations of capital which are among the largest in this country. There are more deposits in the savings banks, more owners of farms, more well-paid wage-workers in this country now than ever before in our history. Of course, when the conditions have favored the growth of so much that was good, they have also favored somewhat the growth of what was evil. It is eminently necessary that we should endeavor to cut out this evil, but let us keep a due sense of proportion; let us not in fixing our gaze upon the lesser evil forget the greater good. The evils are real and some of them are menacing, but they are the outgrowth, not of misery or decadence, but of prosperity—of the progress of our gigantic industrial development. This industrial development must not be checked, but side by side with it should go such progressive regulation as will diminish the evils. We should fail in our duty if we did not try to remedy the evils, but we shall succeed only if we proceed patiently, with practical common sense as well as resolution, separating the good from the bad and holding on to the former while endeavoring to get rid of the latter.

In my Message to the present Congress at its first session I discussed at length the question of the regulation of those big corporations commonly doing an interstate business, often with some

tendency to monopoly, which are popularly known as trusts. The experience of the past year has emphasized, in my opinion, the desirability of the steps I then proposed. A fundamental requisite of social efficiency is a high standard of individual energy and excellence; but this is in no wise inconsistent with power to act in combination for aims which can not so well be achieved by the individual acting alone. A fundamental base of civilization is the inviolability of property; but this is in no wise inconsistent with the right of society to regulate the exercise of the artificial powers which it confers upon the owners of property, under the name of corporate franchises, in such a way as to prevent the misuse of these powers. Corporations, and especially combinations of corporations, should be managed under public regulation. Experience has shown that under our system of government the necessary supervision can not be obtained by State action. It must therefore be achieved by national action. Our aim is not to do away with corporations; on the contrary, these big aggregations are an inevitable development of modern industrialism, and the effort to destroy them would be futile unless accomplished in ways that would work the utmost mischief to the entire body politic. We can do nothing of good in the way of regulating and supervising these corporations until we fix clearly in our minds that we are not attacking the corporations, but endeavoring to do away with any evil in them. We are not hostile to them; we are merely determined that they shall be so handled as to subserve the public good. We draw the line against misconduct, not against wealth. The capitalist who, alone or in conjunction with his fellows, performs some great industrial feat by which he wins money is a welldoer, not a wrongdoer, provided only he works in proper and legitimate lines. We wish to favor such a man when he does well. We wish to supervise and control his actions only to prevent him from doing ill. Publicity can do no harm to the honest corporation; and we need not be overtender about sparing the dishonest corporation.

In curbing and regulating the combinations of capital which are or may become injurious to the public we must be careful not to stop the great enterprises which have legitimately reduced the cost of production, not to abandon the place which our country has won in the leadership of the international industrial world, not to strike down wealth with the result of closing factories and mines, of turning the wage-worker idle in the streets and leaving the farmer without a market for what he grows. Insistence upon the impossible

means delay in achieving the possible, exactly as, on the other hand, the stubborn defense alike of what is good and what is bad in the existing system, the resolute effort to obstruct any attempt at betterment, betrays blindness to the historic truth that wise evolution is the sure safeguard against revolution.

No more important subject can come before the Congress than this of the regulation of interstate business. This country can not afford to sit supine on the plea that under our peculiar system of government we are helpless in the presence of the new conditions, and unable to grapple with them or to cut out whatever of evil has arisen in connection with them. The power of the Congress to regulate interstate commerce is an absolute and unqualified grant, and without limitations other than those prescribed by the Constitution. The Congress has constitutional authority to make all laws necessary and proper for executing this power, and I am satisfied that this power has not been exhausted by any legislation now on the statute books. It is evident, therefore, that evils restrictive of commercial freedom and entailing restraint upon national commerce fall within the regulative power of the Congress, and that a wise and reasonable law would be a necessary and proper exercise of Congressional authority to the end that such evils should be eradicated.

I believe that monopolies, unjust discriminations, which prevent or cripple competition, fraudulent overcapitalization, and other evils in trust organizations and practices which injuriously affect interstate trade can be prevented under the power of the Congress to "regulate commerce with foreign nations and among the several States" through regulations and requirements operating directly upon such commerce, the instrumentalities thereof, and those engaged therein.

I earnestly recommend this subject to the consideration of the Congress with a view to the passage of a law reasonable in its provisions and effective in its operations, upon which the questions can be finally adjudicated that now raise doubts as to the necessity of constitutional amendment. If it prove impossible to accomplish the purposes above set forth by such a law, then, assuredly, we should not shrink from amending the Constitution so as to secure beyond peradventure the power sought.

The Congress has not heretofore made any appropriation for the better enforcement of the antitrust law as it now stands. Very much has been done by the Department of Justice in securing the

enforcement of this law, but much more could be done if the Congress would make a special appropriation for this purpose, to be expended under the direction of the Attorney-General.

One proposition advocated has been the reduction of the tariff as a means of reaching the evils of the trusts which fall within the category I have described. Not merely would this be wholly ineffective, but the diversion of our efforts in such a direction would mean the abandonment of all intelligent attempt to do away with these evils. Many of the largest corporations, many of those which should certainly be included in any proper scheme of regulation, would not be affected in the slightest degree by a change in the tariff, save as such change interfered with the general prosperity of the country. The only relation of the tariff to big corporations as a whole is that the tariff makes manufactures profitable, and the tariff remedy proposed would be in effect simply to make manufactures unprofitable. To remove the tariff as a punitive measure directed against trusts would inevitably result in ruin to the weaker competitors who are struggling against them. Our aim should be not by unwise tariff changes to give foreign products the advantage over domestic products, but by proper regulation to give domestic competition a fair chance; and this end can not be reached by any tariff changes which would affect unfavorably all domestic competitors, good and bad alike. The question of regulation of the trusts stands apart from the question of tariff revision.

Stability of economic policy must always be the prime economic need of this country. This stability should not be fossilization. The country has acquiesced in the wisdom of the protective-tariff principle. It is exceedingly undesirable that this system should be destroyed or that there should be violent and radical changes therein. Our past experience shows that great prosperity in this country has always come under a protective tariff; and that the country can not prosper under fitful tariff changes at short intervals. Moreover, if the tariff laws as a whole work well, and if business has prospered under them and is prospering, it is better to endure for a time slight inconveniences and inequalities in some schedules than to upset business by too quick and too radical changes. It is most earnestly to be wished that we could treat the tariff from the standpoint solely of our business needs. It is, perhaps, too much to hope that partisanship may be entirely excluded from consideration of the subject, but at least it can be made secondary to the business interests of the country—that is, to the interests of our people as a

whole. Unquestionably these business interests will best be served if together with fixity of principle as regards the tariff we combine a system which will permit us from time to time to make the necessary reapplication of the principle to the shifting national needs. We must take scrupulous care that the reapplication shall be made in such a way that it will not amount to a dislocation of our system, the mere threat of which (not to speak of the performance) would produce paralysis in the business energies of the community. The first consideration in making these changes would, of course, be to preserve the principle which underlies our whole tariff system—that is, the principle of putting American business interests at least on a full equality with interests abroad, and of always allowing a sufficient rate of duty to more than cover the difference between the labor cost here and abroad. The well-being of the wage-worker, like the well-being of the tiller of the soil, should be treated as an essential in shaping our whole economic policy. There must never be any change which will jeopardize the standard of comfort, the standard of wages of the American wage-worker.

One way in which the readjustment sought can be reached is by reciprocity treaties. It is greatly to be desired that such treaties may be adopted. They can be used to widen our markets and to give a greater field for the activities of our producers on the one hand, and on the other hand to secure in practical shape the lowering of duties when they are no longer needed for protection among our own people, or when the minimum of damage done may be disregarded for the sake of the maximum of good accomplished. If it prove impossible to ratify the pending treaties, and if there seem to be no warrant for the endeavor to execute others, or to amend the pending treaties so that they can be ratified, then the same end—to secure reciprocity—should be met by direct legislation.

Wherever the tariff conditions are such that a needed change can not with advantage be made by the application of the reciprocity idea, then it can be made outright by a lowering of duties on a given product. If possible, such change should be made only after the fullest consideration by practical experts, who should approach the subject from a business standpoint, having in view both the particular interests affected and the commercial well-being of the people as a whole. The machinery for providing such careful investigation can readily be supplied. The executive department has already at its disposal methods of collecting facts and figures; and if the Congress desires additional consideration to that which will be given

the subject by its own committees, then a commission of business experts can be appointed whose duty it should be to recommend action by the Congress after a deliberate and scientific examination of the various schedules as they are affected by the changed and changing conditions. The unhurried and unbiased report of this commission would show what changes should be made in the various schedules, and how far these changes could go without also changing the great prosperity which this country is now enjoying, or upsetting its fixed economic policy.

The cases in which the tariff can produce a monopoly are so few as to constitute an inconsiderable factor in the question; but of course if in any case it be found that a given rate of duty does promote a monopoly which works ill, no protectionist would object to such reduction of the duty as would equalize competition.

In my judgment, the tariff on anthracite coal should be removed, and anthracite put actually, where it now is nominally, on the free list. This would have no effect at all save in crises; but in crises it might be of service to the people.

Interest rates are a potent factor in business activity, and in order that these rates may be equalized to meet the varying needs of the seasons and of widely separated communities, and to prevent the recurrence of financial stringencies which injuriously affect legitimate business, it is necessary that there should be an element of elasticity in our monetary system. Banks are the natural servants of commerce, and upon them should be placed, as far as practicable, the burden of furnishing and maintaining a circulation adequate to supply the needs of our diversified industries and of our domestic and foreign commerce; and the issue of this should be so regulated that a sufficient supply should be always available for the business interests of the country.

It would be both unwise and unnecessary at this time to attempt to reconstruct our financial system, which has been the growth of a century; but some additional legislation is, I think, desirable. The mere outline of any plan sufficiently comprehensive to meet these requirements would transgress the appropriate limits of this communication. It is suggested, however, that all future legislation on the subject should be with the view of encouraging the use of such instrumentalities as will automatically supply every legitimate demand of productive industries and of commerce, not only in the amount, but in the character of circulation; and of making all

kinds of money interchangeable, and, at the will of the holder, convertible into the established gold standard.

I again call your attention to the need of passing a proper immigration law, covering the points outlined in my Message to you at the first session of the present Congress; substantially such a bill has already passed the House.

How to secure fair treatment alike for labor and for capital, how to hold in check the unscrupulous man, whether employer or employee, without weakening individual initiative, without hampering and cramping the industrial development of the country, is a problem fraught with great difficulties and one which it is of the highest importance to solve on lines of sanity and far-sighted common sense as well as of devotion to the right. This is an era of federation and combination. Exactly as business men find they must often work through corporations, and as it is a constant tendency of these corporations to grow larger, so it is often necessary for laboring men to work in federations, and these have become important factors of modern industrial life. Both kinds of federation, capitalistic and labor, can do much good, and as a necessary corollary they can both do evil. Opposition to each kind of organization should take the form of opposition to whatever is bad in the conduct of any given corporation or union—not of attacks upon corporations as such nor upon unions as such; for some of the most far-reaching beneficent work for our people has been accomplished through both corporations and unions. Each must refrain from arbitrary or tyrannous interference with the rights of others. Organized capital and organized labor alike should remember that in the long run the interest of each must be brought into harmony with the interest of the general public; and the conduct of each must conform to the fundamental rules of obedience to the law, of individual freedom, and of justice and fair dealing toward all. Each should remember that in addition to power it must strive after the realization of healthy, lofty, and generous ideals. Every employer, every wage-worker, must be guaranteed his liberty and his right to do as he likes with his property or his labor so long as he does not infringe upon the rights of others. It is of the highest importance that employer and employee alike should endeavor to appreciate each the viewpoint of the other and the sure disaster that will come upon both in the long run if either grows to take as habitual an attitude of sour hostility and distrust toward the other.

Few people deserve better of the country than those representatives both of capital and labor—and there are many such—who work continually to bring about a good understanding of this kind, based upon wisdom and upon broad and kindly sympathy between employers and employed. Above all, we need to remember that any kind of class animosity in the political world is, if possible, even more wicked, even more destructive to national welfare, than sectional, race, or religious animosity. We can get good government only upon condition that we keep true to the principles upon which this Nation was founded, and judge each man not as a part of a class, but upon his individual merits. All that we have a right to ask of any man, rich or poor, whatever his creed, his occupation, his birthplace, or his residence, is that he shall act well and honorably by his neighbor and by his country. We are neither for the rich man as such nor for the poor man as such; we are for the upright man, rich or poor. So far as the constitutional powers of the National Government touch these matters of general and vital moment to the Nation, they should be exercised in conformity with the principles above set forth.

It is earnestly hoped that a secretary of commerce may be created, with a seat in the Cabinet. The rapid multiplication of questions affecting labor and capital, the growth and complexity of the organizations through which both labor and capital now find expression, the steady tendency toward the employment of capital in huge corporations, and the wonderful strides of this country toward leadership in the international business world justify an urgent demand for the creation of such a position. Substantially all the leading commercial bodies in this country have united in requesting its creation. It is desirable that some such measure as that which has already passed the Senate be enacted into law. The creation of such a department would in itself be an advance toward dealing with and exercising supervision over the whole subject of the great corporations doing an interstate business; and with this end in view, the Congress should endow the department with large powers, which could be increased as experience might show the need.

I hope soon to submit to the Senate a reciprocity treaty with Cuba. On May 20 last the United States kept its promise to the island by formally vacating Cuban soil and turning Cuba over to

those whom her own people had chosen as the first officials of the new Republic.

Cuba lies at our doors, and whatever affects her for good or for ill affects us also. So much have our people felt this that in the Platt amendment we definitely took the ground that Cuba must hereafter have closer political relations with us than with any other power. Thus in a sense Cuba has become a part of our international political system. This makes it necessary that in return she should be given some of the benefits of becoming part of our economic system. It is, from our own standpoint, a short-sighted and mischievous policy to fail to recognize this need. Moreover, it is unworthy of a mighty and generous nation, itself the greatest and most successful republic in history, to refuse to stretch out a helping hand to a young and weak sister republic just entering upon its career of independence. We should always fearlessly insist upon our rights in the face of the strong, and we should with ungrudging hand do our generous duty by the weak. I urge the adoption of reciprocity with Cuba not only because it is eminently for our own interests to control the Cuban market and by every means to foster our supremacy in the tropical lands and waters south of us, but also because we, of the giant republic of the north, should make all our sister nations of the American Continent feel that whenever they will permit it we desire to show ourselves disinterestedly and effectively their friend.

A convention with Great Britain has been concluded, which will be at once laid before the Senate for ratification, providing for reciprocal trade arrangements between the United States and Newfoundland on substantially the lines of the convention formerly negotiated by the Secretary of State, Mr. Blaine. I believe reciprocal trade relations will be greatly to the advantage of both countries.

As civilization grows warfare becomes less and less the normal condition of foreign relations. The last century has seen a marked diminution of wars between civilized powers; wars with uncivilized powers are largely mere matters of international police duty, essential for the welfare of the world. Wherever possible, arbitration or some similar method should be employed in lieu of war to settle difficulties between civilized nations, although as yet the world has not progressed sufficiently to render it possible, or necessarily desirable, to invoke arbitration in every case. The formation of the

international tribunal which sits at The Hague is an event of good omen from which great consequences for the welfare of all mankind may flow. It is far better, where possible, to invoke such a permanent tribunal than to create special arbitrators for a given purpose.

It is a matter of sincere congratulation to our country that the United States and Mexico should have been the first to use the good offices of The Hague Court. This was done last summer with most satisfactory results in the case of a claim at issue between us and our sister Republic. It is earnestly to be hoped that this first case will serve as a precedent for others, in which not only the United States but foreign nations may take advantage of the machinery already in existence at The Hague.

I commend to the favorable consideration of the Congress the Hawaiian fire claims, which were the subject of careful investigation during the last session.

The Congress has wisely provided that we shall build at once an isthmian canal, if possible at Panama. The Attorney-General reports that we can undoubtedly acquire good title from the French Panama canal company. Negotiations are now pending with Colombia to secure her assent to our building the canal. This canal will be one of the greatest engineering feats of the twentieth century; a greater engineering feat than has yet been accomplished during the history of mankind. The work should be carried out as a continuing policy without regard to change of Administration; and it should be begun under circumstances which will make it a matter of pride for all Administrations to continue the policy.

The canal will be of great benefit to America, and of importance to all the world. It will be of advantage to us industrially and also as improving our military position. It will be of advantage to the countries of tropical America. It is earnestly to be hoped that all of these countries will do as some of them have already done with signal success, and will invite to their shores commerce and improve their material conditions by recognizing that stability and order are the prerequisites of successful development. No independent nation in America need have the slightest fear of aggression from the United States. It behooves each one to maintain order within its own borders and to discharge its just obligations to foreigners. When this is done, they can rest assured that, be they strong or weak, they have nothing to dread from outside interference. More and more

the increasing interdependence and complexity of international political and economic relations render it incumbent on all civilized and orderly powers to insist on the proper policing of the world.

During the fall of 1901 a communication was addressed to the Secretary of State, asking whether permission would be granted by the President to a corporation to lay a cable from a point on the California coast to the Philippine Islands by way of Hawaii. A statement of conditions or terms upon which such corporation would undertake to lay and operate a cable was volunteered.

Inasmuch as the Congress was shortly to convene, and Pacific-cable legislation had been the subject of consideration by the Congress for several years, it seemed to me wise to defer action upon the application until the Congress had first an opportunity to act. The Congress adjourned without taking any action, leaving the matter in exactly the same condition in which it stood when the Congress convened.

Meanwhile it appears that the Commercial Pacific Cable Company had promptly proceeded with preparations for laying its cable. It also made application to the President for access to and use of soundings taken by the U. S. S. *Nero*, for the purpose of discovering a practicable route for a trans-Pacific cable, the company urging that with access to these soundings it could complete its cable much sooner than if it were required to take soundings upon its own account. Pending consideration of this subject, it appeared important and desirable to attach certain conditions to the permission to examine and use the soundings, if it should be granted.

In consequence of this solicitation of the cable company, certain conditions were formulated, upon which the President was willing to allow access to these soundings and to consent to the landing and laying of the cable, subject to any alterations or additions thereto imposed by the Congress. This was deemed proper, especially as it was clear that a cable connection of some kind with China, a foreign country, was a part of the company's plan. This course was, moreover, in accordance with a line of precedents, including President Grant's action in the case of the first French cable, explained to the Congress in his Annual Message of December, 1875, and the instance occurring in 1879 of the second French cable from Brest to St. Pierre, with a branch to Cape Cod.

These conditions prescribed, among other things, a maximum rate for commercial messages and that the company should construct

a line from the Philippine Islands to China, there being at present, as is well known, a British line from Manila to Hongkong.

The representatives of the cable company kept these conditions long under consideration, continuing, in the meantime, to prepare for laying the cable. They have, however, at length acceded to them, and an all-American line between our Pacific coast and the Chinese Empire, by way of Honolulu and the Philippine Islands, is thus provided for, and is expected within a few months to be ready for business.

Among the conditions is one reserving the power of the Congress to modify or repeal any or all of them. A copy of the conditions is herewith transmitted.

Of Porto Rico it is only necessary to say that the prosperity of the island and the wisdom with which it has been governed have been such as to make it serve as an example of all that is best in insular administration.

On July 4 last, on the one hundred and twenty-sixth anniversary of the declaration of our independence, peace and amnesty were promulgated in the Philippine Islands. Some trouble has since from time to time threatened with the Mohammedan Moros, but with the late insurrectionary Filipinos the war has entirely ceased. Civil government has now been introduced. Not only does each Filipino enjoy such rights to life, liberty, and the pursuit of happiness as he has never before known during the recorded history of the islands, but the people taken as a whole now enjoy a measure of self-government greater than that granted to any other Orientals by any foreign power and greater than that enjoyed by any other Orientals under their own governments, save the Japanese alone. We have not gone too far in granting these rights of liberty and self-government; but we have certainly gone to the limit that in the interests of the Philippine people themselves it was wise or just to go. To hurry matters, to go faster than we are now going, would entail calamity on the people of the islands. No policy ever entered into by the American people has vindicated itself in more signal manner than the policy of holding the Philippines. The triumph of our arms, above all the triumph of our laws and principles, has come sooner than we had any right to expect. Too much praise can not be given to the Army for what it has done in the Philippines both in warfare and from an administrative standpoint

in preparing the way for civil government; and similar credit belongs to the civil authorities for the way in which they have planted the seeds of self-government in the ground thus made ready for them. The courage, the unflinching endurance, the high soldierly efficiency, and the general kind-heartedness and humanity of our troops have been strikingly manifested. There now remain only some fifteen thousand troops in the islands. All told, over one hundred thousand have been sent there. Of course, there have been individual instances of wrongdoing among them. They warred under fearful difficulties of climate and surroundings; and under the strain of the terrible provocations which they continually received from their foes, occasional instances of cruel retaliation occurred. Every effort has been made to prevent such cruelties, and finally these efforts have been completely successful. Every effort has also been made to detect and punish the wrongdoers. After making all allowance for these misdeeds, it remains true that few indeed have been the instances in which war has been waged by a civilized power against semicivilized or barbarous forces where there has been so little wrongdoing by the victors as in the Philippine Islands. On the other hand, the amount of difficult, important, and beneficent work which has been done is well-nigh incalculable.

Taking the work of the Army and the civil authorities together, it may be questioned whether anywhere else in modern times the world has seen a better example of real constructive statesmanship than our people have given in the Philippine Islands. High praise should also be given those Filipinos, in the aggregate very numerous, who have accepted the new conditions and joined with our representatives to work with hearty good will for the welfare of the islands.

The Army has been reduced to the minimum allowed by law. It is very small for the size of the Nation, and most certainly should be kept at the highest point of efficiency. The senior officers are given scant chance under ordinary conditions to exercise commands commensurate with their rank, under circumstances which would fit them to do their duty in time of actual war. A system of maneuvering our Army in bodies of some little size has been begun and should be steadily continued. Without such maneuvers it is folly to expect that in the event of hostilities with any serious foe even a small army corps could be handled to advantage. Both our officers and enlisted men are such that we can take hearty pride in them. No better material can be found.

But they must be thoroughly trained, both as individuals and in the mass. The marksmanship of the men must receive special attention. In the circumstances of modern warfare the man must act far more on his own individual responsibility than ever before, and the high individual efficiency of the unit is of the utmost importance. Formerly this unit was the regiment; it is now not the regiment, not even the troop or company; it is the individual soldier. Every effort must be made to develop every workmanlike and soldierly quality in both the officer and the enlisted man.

I urgently call your attention to the need of passing a bill providing for a general staff and for the reorganization of the supply departments on the lines of the bill proposed by the Secretary of War last year. When the young officers enter the Army from West Point they probably stand above their compeers in any other military service. Every effort should be made, by training, by reward of merit, by scrutiny into their careers and capacity, to keep them of the same high relative excellence throughout their careers.

The measure providing for the reorganization of the militia system and for securing the highest efficiency in the National Guard, which has already passed the House, should receive prompt attention and action. It is of great importance that the relation of the National Guard to the militia and volunteer forces of the United States should be defined, and that in place of our present obsolete laws a practical and efficient system should be adopted.

Provision should be made to enable the Secretary of War to keep cavalry and artillery horses, worn-out in long performance of duty. Such horses fetch but a trifle when sold; and rather than turn them out to the misery awaiting them when thus disposed of, it would be better to employ them at light work around the posts, and when necessary to put them painlessly to death.

For the first time in our history naval maneuvers on a large scale are being held under the immediate command of the Admiral of the Navy. Constantly increasing attention is being paid to the gunnery of the Navy, but it is yet far from what it should be. I earnestly urge that the increase asked for by the Secretary of the Navy in the appropriation for improving the marksmanship be granted. In battle the only shots that count are the shots that hit. It is necessary to provide ample funds for practice with the great guns in time of peace. These funds must provide not only for the purchase of projectiles, but for allowances for prizes to encourage the gun crews,

and especially the gun pointers, and for perfecting an intelligent system under which alone it is possible to get good practice.

There should be no halt in the work of building up the Navy, providing every year additional fighting craft. We are a very rich country, vast in extent of territory and great in population; a country, moreover, which has an Army diminutive indeed when compared with that of any other first-class power. We have deliberately made our own certain foreign policies which demand the possession of a first-class navy. The isthmian canal will greatly increase the efficiency of our Navy if the Navy is of sufficient size; but if we have an inadequate navy, then the building of the canal would be merely giving a hostage to any power of superior strength. The Monroe Doctrine should be treated as the cardinal feature of American foreign policy; but it would be worse than idle to assert it unless we intended to back it up, and it can be backed up only by a thoroughly good navy. A good navy is not a provocative of war. It is the surest guaranty of peace.

Each individual unit of our Navy should be the most efficient of its kind as regards both material and personnel that is to be found in the world. I call your special attention to the need of providing for the manning of the ships. Serious trouble threatens us if we can not do better than we are now doing as regards securing the services of a sufficient number of the highest type of sailormen, of sea mechanics. The veteran seamen of our war ships are of as high a type as can be found in any navy which rides the waters of the world; they are unsurpassed in daring, in resolution, in readiness, in thorough knowledge of their profession. They deserve every consideration that can be shown them. But there are not enough of them. It is no more possible to improvise a crew than it is possible to improvise a war ship. To build the finest ship, with the deadliest battery, and to send it afloat with a raw crew, no matter how brave they were individually, would be to insure disaster if a foe of average capacity were encountered. Neither ships nor men can be improvised when war has begun.

We need a thousand additional officers in order to properly man the ships now provided for and under construction. The classes at the Naval School at Annapolis should be greatly enlarged. At the same time that we thus add the officers where we need them, we should facilitate the retirement of those at the head of the list whose usefulness has become impaired. Promotion must be fostered if the service is to be kept efficient.

The lamentable scarcity of officers, and the large number of recruits and of unskilled men necessarily put aboard the new vessels as they have been commissioned, has thrown upon our officers, and especially on the lieutenants and junior grades, unusual labor and fatigue and has gravely strained their powers of endurance. Nor is there sign of any immediate let-up in this strain. It must continue for some time longer, until more officers are graduated from Annapolis, and until the recruits become trained and skillful in their duties. In these difficulties incident upon the development of our war fleet the conduct of all our officers has been creditable to the service, and the lieutenants and junior grades in particular have displayed an ability and a steadfast cheerfulness which entitles them to the ungrudging thanks of all who realize the disheartening trials and fatigues to which they are of necessity subjected.

There is not a cloud on the horizon at present. There seems not the slightest chance of trouble with a foreign power. We most earnestly hope that this state of things may continue; and the way to insure its continuance is to provide for a thoroughly efficient navy. The refusal to maintain such a navy would invite trouble, and if trouble came would insure disaster. Fatuous self-complacency or vanity, or short-sightedness in refusing to prepare for danger, is both foolish and wicked in such a nation as ours; and past experience has shown that such fatuity in refusing to recognize or prepare for any crisis in advance is usually succeeded by a mad panic of hysterical fear once the crisis has actually arrived.

The striking increase in the revenues of the Post-Office Department shows clearly the prosperity of our people and the increasing activity of the business of the country.

The receipts of the Post-Office Department for the fiscal year ending June 30 last amounted to $121,848,047.26, an increase of $10,216,853.87 over the preceding year, the largest increase known in the history of the postal service. The magnitude of this increase will best appear from the fact that the entire postal receipts for the year 1860 amounted to but $8,518,067.

Rural free-delivery service is no longer in the experimental stage; it has become a fixed policy. The results following its introduction have fully justified the Congress in the large appropriations made for its establishment and extension. The average yearly increase in post-office receipts in the rural districts of the country is about two per cent. We are now able, by actual results, to show

that where rural free-delivery service has been established to such an extent as to enable us to make comparisons the yearly increase has been upward of ten per cent.

On November 1, 1902, 11,650 rural free-delivery routes had been established and were in operation, covering about one-third of the territory of the United States available for rural free-delivery service. There are now awaiting the action of the Department petitions and applications for the establishment of 10,748 additional routes. This shows conclusively the want which the establishment of the service has met and the need of further extending it as rapidly as possible. It is justified both by the financial results and by the practical benefits to our rural population; it brings the men who live on the soil into close relations with the active business world; it keeps the farmer in daily touch with the markets; it is a potential educational force; it enhances the value of farm property, makes farm life far pleasanter and less isolated, and will do much to check the undesirable current from country to city.

It is to be hoped that the Congress will make liberal appropriations for the continuance of the service already established and for its further extension.

Few subjects of more importance have been taken up by the Congress in recent years than the inauguration of the system of nationally-aided irrigation for the arid regions of the far West. A good beginning therein has been made. Now that this policy of national irrigation has been adopted, the need of thorough and scientific forest protection will grow more rapidly than ever throughout the public-land States.

Legislation should be provided for the protection of the game, and the wild creatures generally, on the forest reserves. The senseless slaughter of game, which can by judicious protection be permanently preserved on our national reserves for the people as a whole, should be stopped at once. It is, for instance, a serious count against our national good sense to permit the present practice of butchering off such a stately and beautiful creature as the elk for its antlers or tusks.

So far as they are available for agriculture, and to whatever extent they may be reclaimed under the national irrigation law, the remaining public lands should be held rigidly for the home builder, the settler who lives on his land, and for no one else. In their actual use the desert-land law, the timber and stone law, and the commutation

clause of the homestead law have been so perverted from the intention with which they were enacted as to permit the acquisition of large areas of the public domain for other than actual settlers and the consequent prevention of settlement. Moreover, the approaching exhaustion of the public ranges has of late led to much discussion as to the best manner of using these public lands in the West which are suitable chiefly or only for grazing. The sound and steady development of the West depends upon the building up of homes therein. Much of our prosperity as a nation has been due to the operation of the homestead law. On the other hand, we should recognize the fact that in the grazing region the man who corresponds to the homesteader may be unable to settle permanently if only allowed to use the same amount of pasture land that his brother, the homesteader, is allowed to use of arable land. One hundred and sixty acres of fairly rich and well-watered soil, or a much smaller amount of irrigated land, may keep a family in plenty, whereas no one could get a living from one hundred and sixty acres of dry pasture land capable of supporting at the outside only one head of cattle to every ten acres. In the past great tracts of the public domain have been fenced in by persons having no title thereto, in direct defiance of the law forbidding the maintenance or construction of any such unlawful inclosure of public land. For various reasons there has been little interference with such inclosures in the past, but ample notice has now been given the trespassers, and all the resources at the command of the Government will hereafter be used to put a stop to such trespassing.

In view of the capital importance of these matters, I commend them to the earnest consideration of the Congress, and if the Congress finds difficulty in dealing with them from lack of thorough knowledge of the subject, I recommend that provision be made for a commission of experts specially to investigate and report upon the complicated questions involved.

I especially urge upon the Congress the need of wise legislation for Alaska. It is not to our credit as a nation that Alaska, which has been ours for thirty-five years, should still have as poor a system of laws as is the case. No country has a more valuable possession—in mineral wealth, in fisheries, furs, forests, and also in land available for certain kinds of farming and stockgrowing. It is a territory of great size and varied resources, well fitted to support a large permanent population. Alaska needs a good land law and such

provisions for homesteads and preemptions as will encourage permanent settlement. We should shape legislation with a view not to the exploiting and abandoning of the territory, but to the building up of homes therein. The land laws should be liberal in type, so as to hold out inducements to the actual settler whom we most desire to see take possession of the country. The forests of Alaska should be protected, and, as a secondary but still important matter, the game also, and at the same time it is imperative that the settlers should be allowed to cut timber, under proper regulations, for their own use. Laws should be enacted to protect the Alaskan salmon fisheries against the greed which would destroy them. They should be preserved as a permanent industry and food supply. Their management and control should be turned over to the Commission of Fish and Fisheries. Alaska should have a Delegate in the Congress. It would be well if a Congressional committee could visit Alaska and investigate its needs on the ground.

In dealing with the Indians our aim should be their ultimate absorption into the body of our people. But in many cases this absorption must and should be very slow. In portions of the Indian Territory the mixture of blood has gone on at the same time with progress in wealth and education, so that there are plenty of men with varying degrees of purity of Indian blood who are absolutely indistinguishable in point of social, political, and economic ability from their white associates. There are other tribes which have as yet made no perceptible advance toward such equality. To try to force such tribes too fast is to prevent their going forward at all. Moreover, the tribes live under widely different conditions. Where a tribe has made considerable advance and lives on fertile farming soil it is possible to allot the members lands in severalty much as is the case with white settlers. There are other tribes where such a course is not desirable. On the arid prairie lands the effort should be to induce the Indians to lead pastoral rather than agricultural lives, and to permit them to settle in villages rather than to force them into isolation.

The large Indian schools situated remote from any Indian reservation do a special and peculiar work of great importance. But, excellent though these are, an immense amount of additional work must be done on the reservations themselves among the old, and above all among the young, Indians.

The first and most important step toward the absorption of the

Indian is to teach him to earn his living; yet it is not necessarily to be assumed that in each community all Indians must become either tillers of the soil or stock raisers. Their industries may properly be diversified, and those who show special desire or adaptability for industrial or even commercial pursuits should be encouraged so far as practicable to follow out each his own bent.

Every effort should be made to develop the Indian along the lines of natural aptitude, and to encourage the existing native industries peculiar to certain tribes, such as the various kinds of basket weaving, canoe building, smith work, and blanket work. Above all, the Indian boys and girls should be given confident command of colloquial English, and should ordinarily be prepared for a vigorous struggle with the conditions under which their people live, rather than for immediate absorption into some more highly developed community.

The officials who represent the Government in dealing with the Indians work under hard conditions, and also under conditions which render it easy to do wrong and very difficult to detect wrong. Consequently they should be amply paid on the one hand, and on the other hand a particularly high standard of conduct should be demanded from them, and where misconduct can be proved the punishment should be exemplary.

In no department of governmental work in recent years has there been greater success than in that of giving scientific aid to the farming population, thereby showing them how most efficiently to help themselves. There is no need of insisting upon its importance, for the welfare of the farmer is fundamentally necessary to the welfare of the Republic as a whole. In addition to such work as quarantine against animal and vegetable plagues, and warring against them when here introduced, much efficient help has been rendered to the farmer by the introduction of new plants specially fitted for cultivation under the peculiar conditions existing in different portions of the country. New cereals have been established in the semi-arid West. For instance, the practicability of producing the best types of macaroni wheats in regions of an annual rainfall of only ten inches or thereabouts has been conclusively demonstrated. Through the introduction of new rices in Louisiana and Texas the production of rice in this country has been made to about equal the home demand. In the Southwest the possibility of regrassing overstocked range lands has been demonstrated; in the North many new

forage crops have been introduced, while in the East it has been shown that some of our choicest fruits can be stored and shipped in such a way as to find a profitable market abroad.

I again recommend to the favorable consideration of the Congress the plans of the Smithsonian Institution for making the Museum under its charge worthy of the Nation, and for preserving at the National Capital not only records of the vanishing races of men but of the animals of this continent which, like the buffalo, will soon become extinct unless specimens from which their representatives may be renewed are sought in their native regions and maintained there in safety.

The District of Columbia is the only part of our territory in which the National Government exercises local or municipal functions, and where in consequence the Government has a free hand in reference to certain types of social and economic legislation which must be essentially local or municipal in their character. The Government should see to it, for instance, that the hygienic and sanitary legislation affecting Washington is of a high character. The evils of slum dwellings, whether in the shape of crowded and congested tenement-house districts or of the back-alley type, should never be permitted to grow up in Washington. The city should be a model in every respect for all the cities of the country. The charitable and correctional systems of the District should receive consideration at the hands of the Congress to the end that they may embody the results of the most advanced thought in these fields. Moreover, while Washington is not a great industrial city, there is some industrialism here, and our labor legislation, while it would not be important in itself, might be made a model for the rest of the Nation. We should pass, for instance, a wise employer's-liability act for the District of Columbia, and we need such an act in our navy-yards. Railroad companies in the District ought to be required by law to block their frogs.

The safety-appliance law, for the better protection of the lives and limbs of railway employees, which was passed in 1893, went into full effect on August 1, 1901. It has resulted in averting thousands of casualties. Experience shows, however, the necessity of additional legislation to perfect this law. A bill to provide for this passed the Senate at the last session. It is to be hoped that some such measure may now be enacted into law.

There is a growing tendency to provide for the publication of masses of documents for which there is no public demand and for the printing of which there is no real necessity. Large numbers of volumes are turned out by the Government printing presses for which there is no justification. Nothing should be printed by any of the Departments unless it contains something of permanent value, and the Congress could with advantage cut down very materially on all the printing which it has now become customary to provide. The excessive cost of Government printing is a strong argument against the position of those who are inclined on abstract grounds to advocate the Government's doing any work which can with propriety be left in private hands.

Gratifying progress has been made during the year in the extension of the merit system of making appointments in the Government service. It should be extended by law to the District of Columbia. It is much to be desired that our consular system be established by law on a basis providing for appointment and promotion only in consequence of proved fitness.

Through a wise provision of the Congress at its last session the White House, which had become disfigured by incongruous additions and changes, has now been restored to what it was planned to be by Washington. In making the restorations the utmost care has been exercised to come as near as possible to the early plans and to supplement these plans by a careful study of such buildings as that of the University of Virginia, which was built by Jefferson. The White House is the property of the Nation, and so far as is compatible with living therein it should be kept as it originally was, for the same reasons that we keep Mount Vernon as it originally was. The stately simplicity of its architecture is an expression of the character of the period in which it was built, and is in accord with the purposes it was designed to serve. It is a good thing to preserve such buildings as historic monuments which keep alive our sense of continuity with the Nation's past.

The reports of the several Executive Departments are submitted to the Congress with this communication.

THEODORE ROOSEVELT.

WHITE HOUSE,
December 2, 1902.

ANNUAL REPORT ON THE FINANCES.

TREASURY DEPARTMENT,
Washington, D. C., December 2, 1902.

SIR: I have the honor to submit the following report:

RECEIPTS AND EXPENDITURES.

Fiscal year 1902.

The revenues of the Government from all sources (by warrants) for the fiscal year ended June 30, 1902, were:

From internal revenue	$271,880,122.10
From customs	254,444,708.19
From profits on coinage, bullion deposits, etc	10,979,506.57
From revenues of the District of Columbia	4,217,841.43
From sales of public lands	4,144,122.78
From fees—consular, letters patent, and lands	4,085,229.87
From navy pension, navy hospital, clothing, and deposit funds	2,019,850.25
From Indian labor, sales of Indian lands, etc	1,775,832.63
From tax on circulation of national banks	1,643,454.73
From payment of interest by Pacific railways	1,564,554.71
From sales of Government property	829,314.15
From customs fees, fines, penalties, etc	828,971.35
From immigrant fund	747,217.15
From miscellaneous	556,153.94
From Soldiers' Home permanent fund	536,045.62
From judicial fees, fines, penalties, etc	334,233.95
From sales of ordnance material and powder	330,438.53
From deposits for surveying public lands	316,579.23
From sale of naval vessels and army transports	313,948.98
From sale of lands and buildings	272,422.72
From tax on seal skins	231,821.20
From trust funds, Department of State	222,061.94
From depredations on public lands	107,995.58
From license fees, Territory of Alaska	95,805.61
From Postal Service	121,848,047.26
Total receipts	684,326,280.47

The expenditures for the same period were:

For the civil establishment, including foreign intercourse, public buildings, collecting the revenues, District of Columbia, and other miscellaneous expenses	$111,067,171.39
For the military establishment, including rivers and harbors, forts, arsenals, seacoast defenses, and expenses of the war with Spain and in the Philippines	112,272,216.08
For the naval establishment, including construction of new vessels, machinery, armament, equipment, improvement at navy-yards, and expenses of the war with Spain and in the Philippines	67,803,128.24
For Indian Service	10,049,584.86
For pensions	138,488,559.73

For interest on the public debt	$29,108,044.82
For deficiency in postal revenues	2,402,152.52
For Postal Service	121,848,047.26
Total expenditures	593,038,904.90
Showing a surplus of	91,287,375.57

In addition to the revenues collected during the year, the cash in the Treasury was increased by the following sums: From national-bank fund, deposited under act of July 14, 1890, in excess of bank notes redeemed, $12,650,160; from issue of 3 per cent bonds under authority of the act of June 13, 1898, for Spanish war expenditures, $20, and from the issue of 4 per cent bonds in liquidation of interest accrued on refunding certificates converted during the year, $1,010, making a total of $12,651,190.

The securities redeemed on account of the sinking fund were as follows:

Fractional currency		$3,088.00
One-year notes of 1863		50.00
Two-year notes of 1863		100.00
Compound-interest notes		2,460.00
Oregon war debt		100.00
Loan of 1863, called		1,000.00
Seven-thirties of 1864–65		1,000.00
Funded loan of 1881, continued		100.00
Funded loan of 1891, called		6,250.00
Funded loan of 1891, continued at 2 per cent		120,900.00
Bonds purchased—		
Loan of 1925	$27,321,200.00	
Funded loan of 1907	24,201,000.00	
Loan of 1904	2,443,750.00	
Loan of 1908–1918	2,105,280.00	
		56,071,230.00
Premium on bonds purchased—		
Loan of 1925	10,735,209.30	
Funded loan of 1907	2,958,620.95	
Loan of 1904	175,680.25	
Loan of 1908–1918	173,880.64	
		14,043,391.14
Total		70,249,669.14

Compared with the fiscal year 1901, the receipts for 1902 decreased $14,990,250.45, as follows:

DECREASE IN RECEIPTS FOR 1902.

Source.	1901.	1902.	Increase.	Decrease.
Internal revenue	$307,180,663.77	$271,880,122.10		$35,300,541.67
Customs	238,585,455.99	254,444,708.19	$15,859,252.20	
Profits on coinage, bullion deposits, etc.	12,731,256.94	10,979,506.57		1,751,750.37
Tax on seal skins, and rent of seal islands	232,655.75	231,821.20		834.55
Sales of Indian lands	1,493,321.24	1,775,832.63	282,511.39	
Sales of Government property	450,698.49	829,314.15	378,615.66	
Sales of public lands	2,965,119.65	4,144,122.78	1,179,003.13	
District of Columbia	3,986,176.19	4,217,841.43	231,665.24	
Navy pension, navy hospital, clothing, and deposit funds	1,778,454.91	2,019,850.25	241,395.34	
Fees—consular, letters patent, and land	3,414,933.49	4,085,229.87	670,296.38	
Depredations on public lands	75,977.70	107,995.58	32,017.88	
Customs fees, fines, penalties, etc.	711,791.43	828,971.35	117,179.92	
Judicial fees, fines, penalties, etc.	324,078.33	334,233.95	10,155.62	
Immigrant fund	585,082.70	747,217.15	162,134.45	
Deposits for surveying public lands	247,258.90	316,579.23	69,320.33	
Payment of interest by Pacific railways	1,316,516.62	1,564,554.71	248,038.09	
Sales of lands and buildings	236,897.53	272,422.72	35,525.19	
Tax on national banks	1,681,473.05	1,643,454.73		38,018.32
Soldiers' Home permanent fund	492,623.66	536,045.62	43,421.96	
Prize money	434,968.36	20,000.00		414,968.36
Miscellaneous	1,166,626.37	854,021.49		312,604.88
Sales of ordnance material	703,054.42	330,438.53		372,615.89
Sales of old vessels	57,220.81	313,948.98	256,728.17	
From sale of claim of United States against Sioux City and Pacific Railroad Company	2,122,841.24			2,122,841.24
Dividend paid by receivers of Union Pacific Railroad for account of Kansas Pacific	133,942.89			133,942.89
Part payment Central Pacific Railroad indebtedness	4,576,247.10			4,576,247.10
Postal Service	111,631,193.39	121,848,047.26	10,216,853.87	
Total	699,316,530.92	684,326,280.47	30,034,114.82	45,024,365.27
Net decrease				14,990,250.45

There was a decrease of $38,776,495.51 in expenditures, as follows:

DECREASE IN EXPENDITURES FOR 1902.

Object.	1901.	1902.	Increase.	Decrease.
CIVIL ESTABLISHMENT.				
Legislative—				
Salaries and expenses	$11,211,514.80	$11,330,201.87	$118,687.07	
Executive proper—				
Salaries and expenses	213,310.64	213,585.22	274.58	
Department of State—				
Salaries and expenses	156,015.39	186,467.44	30,452.05	
Foreign intercourse	3,217,900.35	2,765,734.01		$452,166.34
Treaty obligations between United States and Spain in 1900	100,000.00			100,000.00
Treasury Department—				
Salaries and expenses	3,395,011.92	3,533,329.24	138,317.32	
Independent Treasury	686,610.52	683,544.89		3,065.63
Mints and assay offices	1,906,475.17	1,535,666.06		370,809.11
Territorial governments	224,241.84	165,734.85		58,506.99
Salaries, etc., internal revenue	4,278,479.65	4,248,497.33		29,982.32
Miscellaneous, internal revenue	1,711,803.07	1,359,659.97		352,143.10
Rebate of tax on tobacco		2,928,191.28	2,928,191.28	
Collecting customs revenue	7,713,418.82	7,967,473.86	254,055.04	
Refunding excess of deposits, customs	7,718,057.34	5,414,259.82		2,303,797.52
Debentures or drawbacks, customs	5,257,980.91	5,236,157.44		21,823.47
Miscellaneous items, customs	209,171.22	242,752.01	33,580.79	
Revenue-Cutter Service	1,256,550.61	1,203,637.12		52,913.49
Regulating immigration	333,195.34	399,692.38	66,497.04	
Chinese-exclusion acts	158,928.84	202,744.03	43,815.19	
New revenue vessels	199,511.39	112,514.96		86,996.43

DECREASE IN EXPENDITURES FOR 1902—Continued.

Object.	1901.	1902.	Increase.	Decrease.
Treasury Department—Continued.				
Alien contract-labor laws	$140,073.25	$150,032.16	$9,953.91	
Marine-Hospital Service	1,240,192.37	1,234,264.51		$5,927.86
Life-Saving Service	1,650,907.17	1,667,688.48	16,781.31	
Light-House Establishment	3,638,898.53	4,181,403.39	542,504.86	
Coast and Geodetic Survey	753,298.04	838,832.07	85,534.03	
Steamboat-Inspection Service	354,929.90	344,490.06		10,439.84
Engraving and printing	2,058,598.21	2,653,522.43	594,924.22	
Public buildings	6,781,368.78	4,919,574.17		1,861,794.61
Fuel, etc., public buildings	869,316.72	881,279.99	11,963.27	
Custodians and janitors	1,033,552.14	1,080,029.26	46,477.12	
Furniture for public buildings	287,155.30	257,389.74		29,765.56
Heating apparatus, public buildings	178,576.68	164,257.68		14,319.00
Vaults, safes, etc., public buildings	56,543.78	34,325.50		22,218.28
Fish hatcheries	43,660.81	51,435.72	7,774.91	
Salaries and expenses, Fish Commission	473,236.85	489,255.45	16,018.60	
National Museum	240,096.16	271,828.94	31,732.48	
Zoological Park	75,388.63	83,393.19	8,004.56	
Smithsonian Institution	141,176.87	140,009.18		1,167.69
Interstate Commerce Commission	257,548.50	270,059.55	12,511.05	
French spoliation claims	29,006.68	193,257.73	164,251.05	
Claims under Bowman and Tucker acts	14,068.87	407,855.31	393,786.44	
Epidemic diseases	173,872.41	141,814.53		32,057.88
Buffalo Exposition, Niagara frontier	343,692.92	83,756.90		259,936.02
Louisiana Purchase Exposition, St. Louis	17,321.03	45,275.59	27,954.56	
Refunding customs revenue collected from Porto Rico	506,011.90	399,988.10		106,023.80
Payment of debt of Hawaii	2,488,071.88	751,202.44		1,736,869.44
For credit Central Pacific Railroad indebtedness	1,496,090.41			1,496,090.41
Credits in settlement of indebtedness of Sioux City and Pacific Railroad Company	250,841.24			250,841.24
Miscellaneous items	666,825.63	859,839.95	193,014.32	
War Department—				
Salaries and expenses	2,878,223.83	2,385,030.04		493,193.79
Navy Department—				
Salaries and expenses	478,325.56	498,897.02	20,571.46	
Interior Department—				
Salaries and expenses	4,728,737.91	4,742,480.28	13,742.37	
Public Lands Service	3,171,031.35	3,212,636.28	41,604.93	
Colleges for agriculture	1,200,000.00	1,200,000.00		
Twelfth census	7,809,948.00	2,915,194.81		4,894,753.19
Liquidation of deposits in Hawaiian Postal Savings Bank	757,024.67	4,460.38		752,564.29
Reconstructing rooms of old Library of Congress	288,021.93	205,365.43		82,656.50
Miscellaneous items	785,020.23	1,048,191.98	263,171.75	
Post-Office Department—				
Salaries and expenses	986,574.57	1,053,649.79	67,075.22	
Deficiency in postal revenues	4,954,762.21	2,402,152.52		2,552,609.69
Mail transportation, Pacific railways	606,534.08	592,682.31		13,851.77
Department of Agriculture—				
Salaries and expenses	2,900,653.45	3,423,215.92	522,562.47	
Weather Bureau	1,063,244.00	1,156,773.69	93,529.69	
Department of Labor—				
Salaries and expenses	169,921.35	176,202.49	6,281.14	
Department of Justice—				
Salaries and expenses	435,608.17	473,903.04	38,294.87	
Salaries of justices, assistant attorneys, etc	1,090,048.60	1,038,000.85		52,047.75
Salaries, fees, and expenses of marshals	1,116,465.33	1,151,351.20	34,885.87	
Fees of witnesses	774,958.88	829,086.97	54,128.09	
Salaries and fees of district attorneys	430,357.87	416,257.34		14,100.53
Fees of jurors	610,528.11	614,858.37	4,330.26	
Fees of clerks	228,757.69	247,928.05	19,170.36	
Fees of commissioners	125,871.20	130,531.70	4,660.50	
Support of prisoners	688,533.58	734,008.16	45,474.58	
Pay of bailiffs	146,691.20	146,828.52	137.32	
Judgments, United States courts	29,937.24	26,496.64		3,440.60
Miscellaneous items	1,051,857.01	953,492.33		98,364.68
District of Columbia—				
Salaries and expenses	8,748,323.04	9,363,742.00	615,418.96	
	124,464,465.84			18,617,238.82
Deduct repayments in excess of expenditures	2,182,462.74			2,182,462.74
Total Civil Establishment	122,282,003.10	113,469,329.91	7,622,096.89	16,434,776.08

DECREASE IN EXPENDITURES FOR 1902—Continued

Object.	1901.	1902.	Increase.	Decrease.
MILITARY ESTABLISHMENT.				
National defense	$960,233.00			$900,233.00
Emergency fund	360,583.08	$42,362.20		318,220.88
Refunding customs revenue collected from Porto Rico	372,090.34			372,090.34
Pay Department	38,243,279.21	36,915,284.17		1,327,995.04
Extra pay, war with Spain	249,324.61	82,538.85		166,785.76
Subsistence Department	12,764,977.27	6,420,827.28		6,344,149.99
Quartermaster's Department	48,222,948.50	31,725,860.32		16,497,088.18
Medical Department	2,553,168.24	850,602.41		1,702,565.83
Ordnance Department	11,631,915.70	11,155,777.83		476,137.87
Engineer Department	841,094.75	755,091.75		86,003.00
Signal Service	446,698.93	245,379.06		201,319.87
Military telegraph and cable lines	123,050.00	106,491.47		16,558.53
Military Academy	398,891.67	257,104.92		141,786.75
Improving harbors	6,781,441.94	6,331,767.29		449,674.65
Improving rivers	12,763,031.77	8,616,213.45		4,146,818.32
Bringing home remains of officers, soldiers, and others	201,367.85	109,972.27		91,395.58
Military posts	648,919.77	1,053,242.45	$404,322.62	
National Homes for Disabled Soldiers	3,276,708.85	3,236,434.40		40,274.45
State homes for disabled soldiers	1,133,380.59	1,004,724.80		128,655.79
Support of Soldiers' Home	492,610.71	536,045.62	43,434.91	
Soldiers' Home permanent fund	248,000.00	236,000.00		12,000.00
Soldiers' Home interest account	78,032.77	87,661.27	9,628.50	
Reimbursing States and Territories, expenses of raising troops, Spanish war	964,186.77	599,431.34		364,755.43
Refunding to States expenses incurred in raising volunteers		1,053,652.42	1,053,652.42	
Miscellaneous items	919,760.88	849,750.51		70,010.37
Total Military Establishment	144,615,697.20	112,272,216.08	1,511,038.51	33,854,519.63
NAVAL ESTABLISHMENT.				
National defense	203,895.74	24,999.72		178,896.02
Emergency fund	555,395.72	114,019.42		441,376.30
Increase of the Navy	15,202,578.53	19,793,144.29	4,590,565.76	
Bureau of Yards and Docks	5,294,178.98	5,701,780.29	407,601.31	
Bureau of Equipment	4,060,522.73	5,144,548.32	1,084,025.59	
Bureau of Navigation	473,590.51	580,547.94	106,957.43	
Bureau of Construction and Repair	7,810,405.49	6,998,828.98		811,576.51
Bureau of Ordnance	3,097,203.27	2,549,000.51		548,202.76
Bureau of Steam Engineering	3,542,627.02	3,253,231.78		289,395.24
Bureau of Supplies and Accounts	3,573,119.61	3,957,819.29	384,699.68	
Bureau of Medicine and Surgery	403,893.29	415,870.92	11,977.63	
Marine Corps	2,318,064.18	2,718,621.95	400,557.77	
Naval Academy	725,728.03	872,698.13	146,970.10	
Pay of the Navy	13,347,545.36	13,017,036.61		330,508.75
General account of advances		1,905,889.92	1,905,889.92	
Judgments, bounty for destruction of enemies' vessels		314,853.97	314,853.97	
Miscellaneous items	541,262.14	440,236.20		101,025.94
	61,150,010.60			2,700,981.52
Deduct repayments in excess of expenditures	643,032.13			643,032.13
Total Naval Establishment	60,506,978.47	67,803,128.24	9,354,099.16	2,057,949.39
Indian Service	10,896,073.35	10,049,584.86		846,488.49
Pensions	139,323,621.99	138,488,559.73		835,062.26
Interest on the public debt	32,342,979.04	29,108,044.82		3,234,934.22
Grand total	509,967,353.15	471,190,857.64	18,487,234.56	57,263,730.07
Net decrease				38,776,495.51

Fiscal year 1903.

The revenues of the Government for the current fiscal year are thus estimated upon the basis of existing laws:

From customs	$300,000,000.00
From internal revenue	222,000,000.00
From miscellaneous sources	40,000,000.00
From Postal Service	132,020,630.00
Total estimated revenues	694,020,630.00

The expenditures for the same period are estimated as follows:

For the civil establishment	$126,000,000.00
For the military establishment	130,000,000.00
For the naval establishment	85,000,000.00
For the Indian Service	13,000,000.00
For pensions	138,000,000.00
For interest on the public debt	27,000,000.00
For Postal Service	132,020,630.00
Total estimated expenditures	651,020,630.00
Or a surplus of	43,000,000.00

Fiscal year 1904.

It is estimated that upon the basis of existing laws the revenues of the Government for the fiscal year 1904 will be:

From customs	$315,000,000.00
From internal revenue	230,000,000.00
From miscellaneous sources	40,000,000.00
From Postal Service	144,767,664.00
Total estimated revenues	729,767,664.00

The estimates of appropriations required for the same period, as submitted by the several Executive Departments and offices, are as follows:

Legislative establishment		$5,267,845.50
Executive establishment—		
Executive proper	$319,500.00	
State Department	206,410.00	
Treasury Department	9,974,720.00	
War Department	2,193,466.00	
Navy Department	539,768.00	
Interior Department	5,222,499.00	
Post-Office Department	1,520,630.00	
Department of Agriculture	5,660,150.00	
Department of Justice	240,290.00	
Department of Labor	184,220.00	
		26,061,653.00
Judicial establishment		756,270.00
Foreign intercourse		2,145,415.69
Military establishment		77,986,515.29
Naval establishment		74,884,540.58
Indian affairs		7,685,790.52
Pensions		139,846,480.00

Public works—		
Legislative	$5,500.00	
Treasury Department	13,172,149.27	
War Department	40,175,613.03	
Navy Department	7,541,490.00	
Interior Department	303,100.00	
Department of Justice	80,000.00	
		$61,277,852.30
Miscellaneous—		
Legislative	6,235,137.82	
Treasury Department	17,727,309.50	
War Department	6,406,411.10	
Interior Department	4,783,747.00	
Department of Justice	6,285,840.00	
District of Columbia	11,005,628.00	
		52,444,073.42
Postal Service, including $8,242,856 deficiency in postal revenues		153,010,520.00
Permanent annual appropriations—		
Interest on the public debt	25,000,000.00	
Refunding—customs, internal revenue, etc.	11,410,000.00	
Collecting revenue from customs	5,500,000.00	
Miscellaneous	34,679,820.00	
		76,589,820.00
Total estimated appropriations, exclusive of sinking fund		677,956,776.30
Or an estimated surplus of		51,810,887.70

OPERATIONS OF THE TREASURY.

The Treasurer of the United States in his annual report distinguishes, as the striking features of the condition of the Treasury, the magnitude of the available cash balance and the unprecedented holdings of gold. Among the notable events of the last fiscal year are the diminution of revenues due to the repeal of war taxes, the reduction of expenditures, and the changes in the composition of the paper currency. United States notes and Treasury notes were redeemed in gold to the amount of $17,482,590 of the former and $1,274,590 of the latter, without any impairment of the gold reserve of $150,000,000.

The increase of the available cash balance was $33,780,563, bringing the total on June 30 to $212,187,361. By October 1, 1902, the total increased to $221,253,394, but was reduced by November 1 to $206,421,878.30. Inclusive of the gold reserve, the available balance on June 30 was $362,187,361, the largest in the history of the Department, for while these figures are exceeded by the records of 1879, the latter included in the account the funds held temporarily against called bonds. After allowing for subsidiary silver, silver bullion, and minor coin not available for large payments, there remained in the Treasury vaults November 1 a fund of over $56,000,000, which is slightly in excess of what is deemed a fair working balance. Nearly half of the net available cash balance, over and above the reserve of $150,000,000, was in gold and gold certificates, which amounted to $103,801,290, and increased by November 1 to $113,542,933, a sum far exceeding the outstanding liabilities.

The first quarter of the new fiscal year was marked by an increase in customs, offsetting the reduction by the new statutes in internal revenue. Both the receipts and the expenditures were in excess of the corresponding months in the year preceding. On November 1 a surplus of $13,296,491 was shown for the current fiscal year.

In the total amounts of bonds held for national banks as security for circulating notes, the most significant changes were a reduction of nearly $14,000,000 between October and June, and an increase of nearly $9,000,000 between June and October. On June 30 all of the 2 per cent consols were on deposit in the Treasury with the exception of $42,394,250, and by November 1 all but $35,196,700. The banks with securities pledged for circulation on June 30 numbered 4,553, an increase of 366 for the year. More than 50 per cent of the banks had deposits of less than $100,000 for circulation, and nearly one-third had less than $25,000, while 479 had no more than $10,000 each. Under a ruling of the Secretary, State and city bonds amounting to $19,474,500 were received to November 10 as part security for public deposits to release United States bonds which were transferred to secure circulation.

The unparalleled volume of gold certificates outstanding is the result of the freedom with which they can be issued in consequence of the natural flow of gold from many sources into the Treasury. They are issued against deposits of coin and are paid out for gold bullion and the obligations of the Government. On June 27 they for the first time exceeded in volume the United States notes. The increase in the fiscal year was $57,594,400, which was followed by another of $16,699,000 in the next three months, bringing the total up to $363,311,089.

The Treasury derives gold from several sources. Substantially, the whole receipts from customs are in gold or the representative certificates. The total acquired through the custom-houses during the year is placed at over $215,000,000. Deposits of gold amounting to $22,021,500 were made in New York for the transfer of currency to other points. These deposits began early and were larger than in any recent years except 1900, and for the first time the Treasury was able to receive gold and supply the kinds and amounts of paper currency desired, which were usually United States notes and silver certificates of small denominations. The gold received at the mints and assay offices is paid for mostly by checks. For deposits of gold in San Francisco payments were made by telegraph in New York to the amount of $10,473,000 before November 1.

During the year ended September 30, 1901, there was an addition of $75,956,845 to the paper currency of $20 and under, while only $9,794,500 was added to the higher denominations. Inclusive of gold coin, the smaller denominations constituted over 80 per cent of

the whole stock of money. In the next twelve months the increase of the smaller denominations was $71,283,129, and of the higher only $4,745,750, raising the percentage of the former to over 83. The demands of the people for notes of small denominations have surprised the closest students of the currency. In 1890 there were 37,065,880 pieces of Government paper issued, of the average value of $6.61. In 1902 the issue was 116,697,874 and the average value $4. The facilities for production, so far as the Treasurer's office is concerned, have been often increased, and now seem to be sufficient for present requirements. In July, August, and September, 1902, the issues and redemptions were each over 7,000,000 pieces greater than in the same months of the preceding year. The average value has fallen to $3.62. The currency distributed from Washington to the subtreasuries and banks during the fiscal year amounted to $387,319,888, against $319,912,188 in the year preceding.

From the occupation of the Philippines to September 15 last, an aggregate of $27,331,050 in American money was sent there to be used in Government disbursements. Of this, $15,680,000 was in paper, $10,290,000 in gold, and the remainder in silver and minor coin. There is no record to show what has been returned.

The act of March 14, 1900, has been carried out in accordance with the spirit and letter of the statute. The parity of all kinds of currency has been maintained. For the present, no silver certificates are issued of higher denomination than $5, and no United States notes of any other denomination than $10, while gold certificates alone are issued in the higher forms. As a consequence, the paper currency is gaining in simplicity. Generous Congressional action has made it possible to provide a fair reserve of finished notes of all denominations ready for issue, and the Treasury has been able to meet all demands for currency without any restrictions upon the denominations paid out or the kinds of money received in return. The receipts for redemption and exchange during the fiscal year amounted to $723,275,246, an increase of $54,864,865 over 1901.

National-bank notes amounting to $171,869,258, equal to 48 per cent of the average outstanding, were presented during the year for redemption, an increase of $24,382,681 over the previous year. In the first quarter of the current fiscal year presentations for redemption amounted to $39,791,201, an increase of $3,283,510 over the same period in 1901. The volume of notes outstanding was further increased $10,321,507, making the aggregate $366,993,598. The expenses of redemption for the fiscal year were $153,796, which have been assessed upon the banks at the rate of $0.92444 per $1,000 of their notes redeemed.

There was unusual activity in the movement of silver and minor coin to and from the Treasury. The shipments of silver dollars

reached $40,404,325, exceeding all former records, and the returns for exchange were $2,710,690 greater than the issues. The amount of subsidiary coin outstanding was increased by $6,486,014 to $85,721,228. A recoinage of $4,331,043 of all kinds of uncurrent coins was executed, at a loss of $198,148 on the original face value. There was a marked falling off in the amount of spurious coin and paper money presented.

THE MINT SERVICE.

The mints at Philadelphia, New Orleans, and San Francisco were in operation throughout the fiscal year. The total number of coins struck was 191,419,506, of the value of $94,526,678.12. Gold coinage amounted to $61,980,572.50, silver dollars to $19,402,800, subsidiary silver coins to $10,713,569.45, and minor coins to $2,429,736.17. Gold bullion in the mints increased during the year from $109,219,493 to $124,083,823. The coinage of silver dollars was wholly from bullion purchased under the act of July 14, 1890. Of this, there remained on July 1, 1902, 33,218,712 fine ounces.

The new mint edifice at Philadelphia was occupied in October, 1901, and with its equipment now constitutes probably the most modern and complete coinage establishment in the world. Its ultimate capacity when fully equipped will be much beyond what is at present required. The total appropriation made for equipment was $440,185, of which $349,720.84 had been expended up to July 1, 1902. The contract for the interior construction of the new mint at Denver has been awarded. That machinery and other equipment may be ready for installation when the building is completed, a further appropriation for that purpose should now be made. The mint at San Francisco is being supplied with new machinery to bring its equipment up to the standard of efficiency established at Philadelphia. The mint at New Orleans has been engaged for several years almost wholly upon the coinage of silver, and the approaching exhaustion of the supply of silver bullion in the Treasury raises the question as to the employment of this institution in the future. The opening of the new mint at Denver will provide a natural place of deposit for the gold bullion produced in the Central West, the mint at San Francisco will receive the production and imports of the Pacific coast, and the mint at Philadelphia will receive the imports at New York. The receipts of gold at New Orleans do not justify the continuance of coinage operations there. In view of these facts, the Director of the Mint recommends that after June 30, 1903, the New Orleans mint be reduced to an assay office.

The stock of subsidiary silver in the country is now limited by law to $100,000,000, and that aggregate has been reached. The

amount in the Treasury on the 1st day of October, 1902, was $8,082,371.28, and as this was distributed among 10 offices and included all denominations and a considerable amount that was uncurrent, it is apparent that the ability of the Treasury to meet further demands from the public is very limited. There is pressing need for action by Congress, and it is recommended that the limit upon the stock of subsidiary silver coin be entirely removed; that the requirement that $1,500,000 of silver dollars be coined monthly be repealed, and that the entire stock of silver bullion now in the Treasury be converted into subsidiary coin.

The total earnings and gains of the Mint Service, including seigniorage on silver dollars, subsidiary silver coin, and minor coin, exceeded the expenditures by $9,460,994.12.

The earnings and gains were as follows:

Parting and refining charges	$187,099.66
Alloy charges	10,920.61
Melting, assaying, and stamping charges	45,490.16
Seigniorage on standard silver dollars	5,824,683.44
Seigniorage on subsidiary silver coin	3,269,802.42
Seigniorage on minor coin	1,919,370.25
Profits on manufacture of proof coins and medals	1,710.88
Gains on bullion deposits	81,551.36
Proceeds from sale of old material	10,462.83
Special assays, amount received for	3,467.00
Sale of by-products	16,777.55
Amount received for manufacture of counting boards, etc	117.75
Gain on silver "stock" medals, melted	.82
Total earnings and gains	11,371,454.73

The expenditures, including new equipment, were as follows:

Equipment, Philadelphia mint	$191,864.61
Equipment, Denver mint	1,790.73
Transfer of gold coin and bullion between mints and assay offices	66,964.01
Amount paid in salaries and wages	1,244,828.02
Contingent expenses (less wastage and loss on sweeps sold)	323,447.44
Wastage and loss on sale of sweeps	30,289.93
Expense of distributing minor coin	40,222.01
Loss on bullion shipped to mint	94.49
Loss on recoinage, minor coin	10,959.37
Total expenditure and loss	1,910,460.61

The production of gold in the United States during the calendar year 1901 is estimated at $78,666,700. The industrial consumption during the year is estimated at $21,868,956. The net imports of gold during the fiscal year ended June 30, 1902, were $3,452,304. The stock of gold coin in the country, including bullion in the mints on June 30, 1902, is estimated at $1,192,395,607.

ENGRAVING AND PRINTING.

The general prosperity of the country is probably in no way better shown than in the business of the Bureau having charge of the work of engraving and printing the securities and stamps needed in the

business of the Department. During the year there has been an enormous increase in the demand for these securities and stamps. At the commencement of the year the Treasurer of the United States required 72,000 sheets a day of United States notes and silver certificates. By October 1, 1901, this had increased to 88,000 sheets a day; by November 25, 1901, to 112,000; by December 3, 1901, to 128,000; and early in January, 1902, to 136,000, or nearly double the amount supplied daily at the beginning of the year. The total number of sheets of notes and bonds delivered during the year was 36,586,052, the total sheets delivered during the preceding year being 24,303,731, an increase of 12,282,321.

The demands of the Commissioner of Internal Revenue for internal-revenue stamps caused a delivery of 54,572,605 sheets, being an increase of 1,623,437. To meet the requirements of the Postmaster-General for postage stamps, 45,880,080 sheets were delivered, being an increase of 3,710,287 over the previous year. The deliveries of miscellaneous work were 2,135,599 sheets during the fiscal year 1901 and 2,128,622 sheets in 1902, a slight decrease.

The aggregate of all classes of work increased from 121,558,291 to 139,167,359 sheets, a total increase of 17,609,068. The aggregate amount of work delivered during the year was 15 per cent greater than that in any previous year in the history of the Bureau. In addition to this large increase in the amount of securities and stamps completed and delivered, the stock of unfinished work in the Bureau of Engraving and Printing was doubled.

The amount of United States notes and silver certificates in the reserve vault of the Treasury of the United States was increased more than threefold. This will permit these notes to become thoroughly seasoned before issue, which will add greatly to their appearance and wearing qualities.

In view of the expiration of the charter period of twenty years for which national banking associations were authorized to extend their corporate existence by act of July 12, 1882, it became necessary during the fiscal year to prepare new designs for circulating notes for national banks. New designs of backs and faces for such notes of the denominations of five, ten, twenty, fifty, and one hundred dollars were accordingly engraved, and currency, known as the series of 1902, issued to banks authorized to receive it.

By the act of April 12, 1902, the tax on beer, tobacco, snuff, and cigarettes was changed, and additional stamps were authorized for renovated butter, adulterated butter, and oleomargarine, colored and uncolored. This act took effect July 1, 1902, and the stamps required for its full operation were promptly furnished by the Bureau of Engraving and Printing.

It has been necessary, in order to furnish the quantity of securities and stamps needed in the business of the country, to continue the night force of printers and their assistants, and to extend at times the hours of labor of the entire day printing force equal to one-fourth time. The working of this night force is objectionable, for the reason that it consists in a great part of young women, who are required to pass through the streets to their homes at a late hour of the night. The force of the Bureau occupies every available square foot of space in its building and the addition authorized by the act of June 6, 1900. To avoid the necessity for a night force, it is recommended that an additional building be provided. An estimate for this purpose, including the purchase of a site therefor, will be submitted to Congress.

PUBLIC MONEYS.

The monetary transactions of the Government have been conducted through the Treasurer of the United States, 9 subtreasury officers, and 574 national-bank depositaries. The amount of public moneys held by the bank depositaries on June 30, 1902, including funds to the credit of the Treasurer's general account and United States disbursing officers, was $123,983,067.59, an increase since June 30, 1901, of $23,972,573.64. On June 30, 1902, there were 329 temporary depositaries. One hundred and eleven were designated during the year and 19 discontinued. On November 1 there were 442 temporary depositaries, and the total of public moneys held by all depositaries was $146,885,012.49.

NATIONAL BANKS.

The number of associations in active operation October 31, 1902, was 4,678, with authorized capital of $713,435,695; bonds on deposit to secure circulation, $338,352,670, and circulation outstanding secured by bonds, $335,783,189.

The geographical distribution of banks organized from March 14, 1900 (the date of the act which permitted the organization of banks with a minimum capital of $25,000), to October 31, 1902, with capital and bonds deposited as security for circulation, is as follows:

NATIONAL BANKS ORGANIZED FROM MARCH 14, 1900, TO OCTOBER 31, 1902.

States, etc.	Capital —$50,000.		Capital $50,000+.		Total organizations.		Bonds deposited.		
	No.	Capital.	No.	Capital.	No.	Capital.	Banks capital, —$50,000.	Banks capital, $50,000+.	Total.
Maine	1	$25,000	4	$225,000	5	$250,000	$12,000	$57,500	$69,500
New Hampshire	1	25,000	2	200,000	3	225,000	10,000	50,000	60,000
Vermont	1	25,000	.....	.....	1	25,000	25,000	.....	25,000
Massachusetts	.....	.....	5	2,150,000	5	2,150,000	.....	175,000	175,000
Rhode Island	.....	.....	1	500,000	1	500,000	.....	50,000	50,000
Connecticut	2	50,000	1	50,000	3	100,000	22,500	13,000	35,500
Total New England States	5	125,000	13	3,125,000	18	3,250,000	69,500	345,500	415,000
New York	23	585,000	23	5,510,000	46	6,095,000	199,550	875,000	1,074,550
New Jersey	12	320,000	8	625,000	20	945,000	133,550	132,500	266,050
Pennsylvania	61	1,582,000	72	9,740,000	133	11,322,000	573,600	1,617,750	2,191,350
Delaware	2	50,000	.....	.....	2	50,000	25,000	.....	25,000
Maryland	11	302,000	7	730,000	18	1,032,000	77,700	190,000	267,700
Total Eastern States	109	2,839,000	110	16,605,000	219	19,444,000	1,009,400	2,815,250	3,824,650
Virginia	16	420,000	8	660,000	24	1,080,000	137,750	192,500	330,250
West Virginia	13	365,000	10	610,000	23	975,000	125,750	182,500	308,250
North Carolina	9	230,000	1	50,000	10	280,000	80,250	12,500	92,750
South Carolina	2	50,000	2	110,000	4	160,000	13,250	32,500	45,750
Georgia	8	245,000	8	850,000	16	1,095,000	63,000	182,500	245,500
Florida	2	60,000	4	350,000	6	410,000	17,500	100,000	117,500
Alabama	6	152,500	10	625,000	16	777,500	40,000	165,000	205,000
Mississippi	1	25,000	4	375,000	5	400,000	6,250	143,750	150,000
Louisiana	5	125,000	7	750,000	12	875,000	31,500	162,500	194,000
Texas	112	3,023,000	41	2,810,000	153	5,833,000	913,400	742,750	1,656,150
Arkansas	3	75,000	.....	.....	3	75,000	18,750	.....	18,750
Kentucky	11	275,000	11	2,270,000	22	2,545,000	101,800	374,000	475,800
Tennessee	8	210,000	5	270,000	13	480,000	47,000	92,500	139,500
Total Southern States	196	5,255,500	111	9,730,000	307	14,985,500	1,596,200	2,383,000	3,979,200
Ohio	36	990,000	30	4,170,000	66	5,160,000	312,550	1,027,500	1,340,050
Indiana	24	645,000	17	1,950,000	41	2,595,000	213,050	510,000	723,050
Illinois	49	1,300,000	17	3,300,000	66	4,600,000	500,000	800,000	1,300,000
Michigan	4	110,000	6	430,000	10	540,000	28,550	157,500	186,050
Wisconsin	13	330,000	11	1,050,000	24	1,380,000	90,950	286,250	377,200
Minnesota	62	1,570,000	11	700,000	73	2,270,000	560,250	204,500	764,750
Iowa	49	1,300,000	17	960,000	66	2,260,000	475,750	282,500	758,250
Missouri	9	240,000	7	1,485,000	16	1,725,000	87,750	240,000	327,750
Total Middle States	246	6,485,000	116	14,045,000	362	20,530,000	2,268,850	3,508,250	5,777,100
North Dakota	35	880,000	1	50,000	36	930,000	285,500	19,000	304,500
South Dakota	24	600,000	2	100,000	26	700,000	172,550	25,000	197,550
Nebraska	28	735,000	1	50,000	29	785,000	233,300	12,500	245,800
Kansas	24	615,000	8	650,000	32	1,265,000	223,500	200,000	423,500
Montana	2	55,000	1	250,000	3	305,000	14,000	50,000	64,000
Wyoming	3	75,000	2	100,000	5	175,000	18,750	50,000	68,750
Colorado	10	265,000	7	700,000	17	965,000	71,500	190,000	261,500
New Mexico	6	150,000	1	50,000	7	200,000	48,800	12,500	61,300
Oklahoma	53	1,340,000	6	400,000	59	1,740,000	453,250	105,000	558,250
Indian Territory	43	1,135,000	10	555,000	53	1,690,000	315,400	138,750	454,150
Total Western States	228	5,850,000	39	2,905,000	267	8,755,000	1,836,550	802,750	2,639,300
Washington	3	80,000	4	300,000	7	380,000	26,250	75,000	101,250
Oregon	4	100,000	.....	.....	4	100,000	33,000	.....	33,000
California	4	105,000	11	1,750,000	15	1,855,000	36,500	375,000	411,500
Idaho	5	125,000	1	50,000	6	175,000	31,300	12,500	43,800
Utah	1	30,000	1	50,000	2	80,000	7,500	12,500	20,000
Nevada	.....	.....	.....	.....	.....	.....	.....	.....	.....
Arizona	3	80,000	.....	.....	3	80,000	20,250	.....	20,250
Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hawaii	1	25,000	1	500,000	2	525,000	6,500	50,000	56,500
Total Pacific States	21	545,000	18	2,650,000	39	3,195,000	161,300	525,000	686,300
Total United States	805	21,099,500	407	49,060,000	1,212	70,159,500	6,941,800	10,379,750	17,321,550

The number of banks organized in the leading States is as follows: Texas, 153; Pennsylvania, 133; Minnesota, 73; Ohio, Illinois, and Iowa, 66 each; Oklahoma Territory, 59; Indian Territory, 53; New York, 46; Indiana, 41; North Dakota, 36; Kansas, 32; Nebraska, 29; South Dakota, 26; Virginia and Wisconsin 24 each; West Virginia, 23; Kentucky, 22. The number of banks organized in the other States ranged from 1 in Vermont and Rhode Island to a maximum of 20 in New Jersey. No organizations were effected in Nevada or Alaska.

The Middle States lead both in number of organizations and volume of capital, namely, 362 and $20,530,000, respectively. Three hundred and seven banks were organized in the Southern States, with a capital of $14,985,500; 267, with capital of $8,755,000, in the Western States; 219, with capital of $19,444,000, in the Eastern States; 39, with capital of $3,195,000, in the Pacific States, and 18, with capital of $3,250,000, in the New England States.

During the year ended October 31, 1902, the number of national banks was increased by the formation of 470 associations, with total capital of $31,130,000, of which 302, with capital of $7,905,000, were of the smaller class, and 168, with capital of $23,225,000, of the larger. The net increase, however, was but 399. Nine associations were closed by expiration of their corporate existence, 63 by voluntary liquidation, and 1 by appointment of receiver. Two associations heretofore in charge of receivers were placed in a solvent condition and allowed to resume business.

The authorized capital stock of the national banking associations in existence on October 31, 1901, was $663,224,195, and on October 31, 1902, $713,435,695, an increase during the year of $50,211,500.

The following table gives a summary of organizations of national banks from March 14, 1900, to October 31, 1902:

Classification.	Conversions.		Reorganizations.		Primary organization.		Total.	
	No.	Capital.	No.	Capital.	No.	Capital.	No.	Capital.
Capital less than $50,000.	107	$2,835,000	242	$6,715,000	456	$11,549,500	805	$21,099,500
Capital $50,000 or more..	51	8,655,000	121	14,220,000	235	26,185,000	407	49,060,000
Total	158	11,490,000	363	20,935,000	691	37,734,500	1,212	70,159,500

The changes in the number of active associations, authorized capital, bonds on deposit to secure circulation, circulation secured by bonds and by lawful money, from March 14, 1900, to October 31, 1901 and 1902, are as follows:

	Mar. 14, 1900.	Oct. 31, 1901.	Oct. 31, 1902.
Number of banks	3,617	4,279	4,678
Authorized capital	$616,308,095	$663,224,195	$713,435,695
Bonds deposited	244,611,570	329,833,930	338,352,670
Circulation secured by bonds	216 374,795	328,198,614	335,783,189
Circulation secured by lawful money	38,027,935	31,713,069	44,693,145

The following statement shows the amount and class of bonds on deposit with the Treasurer of the United States as security for national-bank circulation on March 14, 1900, October 31, 1901 and 1902:

Class.	Amount.		
	March 14, 1900.	Oct. 31, 1901.	Oct. 31, 1902.
Funded loan of 1891	$20,490,150	$12,500	
Consols of 1930		316,625,650	$320,738,000
Loan of 1908–1918	56,437,720	3,983,780	6,056,720
Funded loan of 1907	130,171,500	6,032,000	8,248,450
Loan of 1925	14,521,350	2,911,100	2,208,600
Loan of 1904	22,990,850	268,900	1,100,900
Total	244,611,570	329,833,930	338,352,670

The amounts and denominations of national-bank notes outstanding on March 14, 1900, and on October 31, 1901 and 1902, were as follows:

Denomination.	Amount.		
	March 14, 1900.	Oct. 31, 1901.	Oct. 31, 1902.
Ones	$348,275	$347,552	$345,984
Twos	167,466	167,056	165,974
Fives	79,292,685	70,363,595	61,500,670
Tens	79,493,080	123,088,280	154,291,030
Twenties	58,850,060	88,408,100	114,817,840
Fifties	11,851,750	16,186,900	15,953,300
One hundreds	24,233,900	32,889,200	33,243,000
Five hundreds	106,000	102,500	98,000
One thousands	27,000	27,000	25,000
Nonpresented fractions	32,513	33,085	35,536
Total	254,402,729	331,613,268	380,476,334

Under the law, national banking associations are required to make not less than five reports of condition to the Comptroller of the Currency in each year. The latest reports submitted were under date of September 15, and the compiled returns show the condition of 4,601 associations, with paid-in capital stock of $705,535,417. The accumulated surplus and undivided profits of the associations aggregated $495,610,466, an amount slightly in excess of 70 per cent of the capital stock. The outstanding circulation was $317,991,809; individual deposits, $3,209,273,893.93; United States deposits and deposits of United States disbursing officers, $117,097,769.59 and $6,846,033.85, respectively. Borrowed money, represented by notes and bills rediscounted and bills payable, aggregated $33,900,888.36, or only 4.8 per cent of the capital stock.

The total resources of the banks were $6,113,928,912.50, the maximum amount reached in the history of the system. The principal items of resources are as follows: Loans and discounts, $3,280,127,480.69; United States bonds on deposit to secure circulation, $324,253,760; United States bonds on deposit to secure public deposits, $124,685,150;

other bonds, stocks, and securities, $493,109,726.57; bank premises, including furniture and fixtures, $92,652,268.87, this amount representing investments of approximately 13 per cent of capital stock. The banks held in specie and legal-tender notes $366,236,120.02 and $141,757,618, respectively.

Comparing conditions on September 15, 1902, with September 30, 1901, there is shown to have been an increase in total resources of $418,581,617.54. The increases during that period in the principal items of resources and liabilities were as follows: Loans and discounts, $261,511,562.29; United States bonds, $12,570,520; capital stock, $50,193,537; surplus and other profits, $65,048,357.81; individual deposits, $271,520,660.60.

There was a decrease during the year in holdings of specie to the amount of $22,300,751.11; in legal tenders of $9,261,133, and in outstanding circulation of $5,871,788.

The deposits of the associations on September 15, on which reserve was required, amounted to $3,844,365,538.57. The required reserve amounted to $786,770,726.33 and the amount held was $804,333,904.09, being 20.92 per cent of the deposits.

The reserve held by banks in the central reserve cities was as follows: New York, 24.70 per cent; Chicago, 21.89 per cent; St. Louis, 24.15 per cent, an average of 24.09 per cent. Banks in other reserve cities held an average of 24.33 per cent and banks located outside of reserve cities an average of 16.91 per cent. With the exclusion of Government deposits from the reserve requirement, the average reserve held by national banks in the central reserve cities was increased from 24.09 to 25.16 per cent; by banks located in other reserve cities, from 24.33 to 24.87 per cent; by country banks, from 16.91 to 17.16 per cent, and by all banks from 20.92 to 21.43 per cent.

LOANS AND CURRENCY.

The amount of the interest-bearing debt outstanding July 1, 1901, was $987,141,040. On that date the Government was still purchasing United States bonds for the sinking fund, and such purchases were continued with slight intermissions until March 15, 1902. The total amount purchased and charged to the sinking fund for the fiscal year 1902 was $56,071,730, and the disbursement was $70,410,941.33, distributed among the different loans as follows:

PURCHASES FOR THE SINKING FUND, FISCAL YEAR 1902.

Classes.	Bonds.	Premium.	Disbursement.
Three per cent, 1908–1918	$2,105,780	$179,782.84	$2,285,562.84
Four per cent, 1907	24,201,000	3,107,163.34	27,308,163.34
Five per cent, 1904	2,443,750	188,786.10	2,632,536.10
Four per cent, 1925	27,321,200	10,863,479.05	38,184,679.05
Total	56,071,730	14,339,211.33	70,410,941.33

During the fiscal year 1902 there were received for exchange into 4 per cent bonds, funded loan of 1907, $1,340 refunding certificates, the accumulated interest upon which, convertible into principal of 4 per cent bonds, amounted to $1,010. The total issue of 4 per cent bonds of the funded loan of 1907 on this account was, therefore, $2,350.

There was also issued to one of the subscribers of the 3 per cent loan of 1908–1918 a 3 per cent bond of the denomination of $20, to correct an error in filling a subscription.

As a result of these operations, the interest-bearing debt outstanding at the close of business June 30, 1902, was $931,070,340.

Since June 30, 1902, the Department has purchased bonds for the sinking fund for the fiscal year 1903, as follows:

Five per cent bonds, loan of 1904, under Circular No. 117 of September 26, 1902 ..... $25,300

Four per cent bonds, loan of 1925, under Circular No. 128 of October 17, 1902 ..... $16,504,300

The Department has also prepaid interest, for the remainder of the fiscal year, on United States registered and coupon bonds under authority of section 3699 of the Revised Statutes. In pursuance of Circular No. 115, dated September 25, 1902, a rebate of two-tenths of 1 per cent per month was charged by the Department on the amount of interest prepaid. Prepayments under this circular were made during the period beginning October 1, 1902, and ending November 30, 1902. Up to November 1 the amount prepaid was $3,318,397.15 and the rebate thereon was $38,483.55.

The changes in the amounts of the several kinds of money of the United States outside the Treasury between November 1, 1901, and November 1, 1902, are shown in the table following:

COMPARATIVE STATEMENT SHOWING THE CHANGES IN CIRCULATION.

Classes.	In circulation Nov. 1, 1901.	In circulation Nov. 1, 1902.	Decrease.	Increase.
Gold coin	$633,858,471	$624,373,645	$9,484,826	
Standard silver dollars	73,113,520	77,517,158		$4,403,638
Subsidiary silver	83,999,351	91,899,715		7,900,364
Gold certificates	281,678,659	342,756,194		61,077,535
Silver certificates	441,810,337	463,170,438		21,360,101
Treasury notes, act of July 14, 1890	41,384,614	25,748,278	15,636,336	
United States notes	338,781,028	343,639,082		4,858,054
National-bank notes	351,674,562	367,007,482		15,332,920
Total	2,246,300,542	2,336,111,992	25,121,162	114,932,612

The estimated population of the United States November 1, 1901, was 78,211,000, and the per capita supply of money outside the Treasury was $28.72. The estimated population and the per capita supply of money November 1, 1902, were 79,572,000 and $29.36, respectively.

Bonds in aid of an isthmian canal.

The act of June 28, 1902, to provide for the construction of a canal connecting the Atlantic and Pacific oceans, includes, among other provisions, authority for the Secretary of the Treasury to borrow on the credit of the United States, from time to time, as the proceeds may be required to defray expenditures authorized by the act, the sum of $130,000,000, or so much thereof as may be necessary, and to issue therefor United States bonds redeemable after ten years and payable after thirty years from date of issue, bearing interest at the rate of 2 per cent per annum.

There being no reference in the act to the availability of these bonds as security for the circulation of national banks, it is believed that they can be received by the Department on such account only upon such terms as the older classes of United States bonds now outstanding—that is to say, a national bank depositing canal bonds as security for circulation would be required to pay a tax of 1 per cent each year to the Government on account of such circulation. This would place the 2 per cent canal bonds at a great disadvantage as compared with the 2 per cent consols of 1930. A bank depositing the consols is required to pay a tax amounting only to one-half of 1 per cent per annum.

As it is no doubt desired by Congress that the Secretary shall have power to obtain the best terms available in negotiating the canal bonds, it is recommended that the act of June 28, 1902, be amended so as to provide that any national-bank circulation secured by a deposit of canal bonds may be subject only to the same tax as that imposed on circulation secured by the 2 per cent consols of 1930.

FOREIGN COMMERCE.

The marked characteristics of the foreign commerce of the United States during the fiscal year ended June 30, 1902, were a decrease of $106,045,590 in exports and an increase of $80,148,783 in imports. The total exports of the year were $1,381,719,401, of which $1,355,481,861 was of domestic production; the total imports were $903,320,948, making the excess of exports over imports $478,398,453. The decrease in exports is chiefly due to the unusual home demand, to the shortage in the corn crop of 1901, and to a reduction in prices of certain great staples exported. The unusual demand of the home market for manufactures of iron and steel caused a reduction of $18,766,758 in the domestic exports of iron and steel manufactures; the shortage in the corn supply, due to the drought of 1901, caused a reduction of $67,361,099 in the value of corn and corn meal exported, and the fall of upward of 1 cent per pound in the average price of cotton, as compared with 1901, resulted in a reduction of $23,021,624

in the value of cotton exports, although the quantity exported in 1902 was greater than that of 1901. Aside from these exceptional cases, the export figures of the year compare favorably with those of preceding years.

The increase in importations was chiefly due to an enlarged demand by manufacturers for raw materials for use in manufacturing, the increase in the importations of manufacturers' materials of all classes being $69,732,221; and to these was added an increase of $19,708,269 in articles manufactured ready for consumption, and $11,859,750 in those included in the class "articles of voluntary use, luxuries," etc., while in articles of food there was a reduction of $21,151,457. In iron and steel alone, the importation of articles partly or wholly manufactured increased $9,305,458, bringing the total imports of iron and steel manufactures to a point higher than at any time since 1893. The increase of $80,148,783 in importations has brought the total import figures of the year to a point higher than ever before, the total value of importations of 1902 being $903,320,948, against $866,400,922 in 1893, the highest record of preceding years. This increase, as already noted, occurs chiefly in manufacturers' materials, the principal increases being in unmanufactured silk, $12,583,986; hides and skins, $9,786,698; fibers, $8,613,456; cotton, $4,924,342; copper, $4,376,119; lumber and other unmanufactured wood, $4,015,763; chemicals, $4,215,465; and wool, $5,181,907. In practically all of the great articles of foreign production required by our manufacturers, the importations of the year exceed in quantity and value those of any preceding year in the history of our import trade.

The reduction in exports, since it occurred chiefly in food stuffs and raw cotton, applied almost exclusively to the commerce with Europe, to which the exportations fell $128,470,624 below those of the preceding year, while those to North America increased $7,436,620, to Africa $7,925,987, and to Asia and Oceania $13,419,005.

The commerce with the noncontiguous territory of the United States shows a very rapid and gratifying growth. The receipts of merchandise from Porto Rico in 1902 were $8,297,422, against $2,181,024 in 1897, and the shipments to that island in 1902 were $10,719,444, against $1,988,888 in 1897, the year prior to the assumption of control of that island by the United States. From the Hawaiian Islands the receipts of merchandise were $24,700,429, against $13,687,799 in 1897, and the shipments to the islands in 1902 are estimated at $19,000,000, against $4,690,075 in 1897. From the Philippine Islands the receipts of merchandise in 1902 were $6,612,700, against $4,383,740 in 1897, and the shipments to those islands in 1902 were $5,258,470, against $94,597 in 1897. Combining the figures of commerce with the three groups of islands—Porto Rico, Hawaii, and

the Philippines—the figures show total receipts of merchandise from the islands in 1902, $39,610,551, against $20,252,563 in 1897, and total shipments to the islands in 1902, $34,977,914, against $6,773,560 in 1897; while the exports to all Asia and Oceania, including the Hawaiian Islands, were $117,202,118 in 1902, against $61,927,678 in 1897. Thus the exports to the islands have increased more than fourfold, and those to all Asia and Oceania nearly doubled since 1897, while the total exports have in the same time increased less than 50 per cent. Under the recent act of Congress, approved April 29, 1902, authorizing the collection of statistics of commerce between the United States and its noncontiguous territories, a full statement of the commerce with all such territory under the control of the United States, including Alaska, is now being collected and compiled, and indicates that the markets supplied the producers of the United States by these noncontiguous territories now aggregate over $40,000,000 per annum.

The following table presents in concise form the record of the foreign commerce of the country in 1902, compared with preceding years:

ANALYSIS OF THE COMMERCE OF 1902, COMPARED WITH PRECEDING YEARS.

	Year ending June 30—				Increase (+) or decrease (—) in 1902, compared with 1901.
	1899.	1900.	1901.	1902.	
Imports:					
Merchandise—					
Free	$300,279,810	$367,236,866	$339,608,669	$396,818,871	+$57,210,202
Dutiable	396,868,679	482,704,318	483,563,496	506,502,077	+ 22,938,581
Total	697,148,489	849,941,184	823,172,165	903,320,948	+ 80,148,783
Per cent dutiable	56.93	56.79	58.74	56.07	— 2.67
Gold	88,954,603	44,573,184	66,051,187	52,021,254	— 14,029,933
Silver	30,675,056	35,256,302	36,386,521	28,232,254	— 8,154,267
Exports:					
Merchandise—					
Domestic	1,203,931,222	1,370,763,571	1,460,462,806	1,355,481,861	—104,980,945
Foreign	23,092,080	23,719,511	27,302,185	26,237,540	— 1,064,645
Total	1,227,023,302	1,394,483,082	1,487,764,991	1,381,719,401	—106,045,590
Excess of exports over imports (merchandise only)	529,874,813	544,541,898	664,592,826	478,398,453	—186,194,373
Gold	37,522,086	48,266,759	53,185,177	48,568,950	— 4,616,227
Silver	56,319,055	56,712,275	64,285,180	49,732,390	— 14,552,790
Imports for consumption	685,441,892	830,519,252	807,763,301	899,793,754	+ 92,030,453
Duties collected	202,072,050	229,360,771	233,556,110	251,453,155	+ 17,897,045
Ad valorem duties—					
On dutiable, per cent	52.38	49.46	49.83	49.78	— .05
On free and dutiable ....per cent	29.43	27.62	28.91	27.95	— .96
Tonnage:					
Entered in the foreign trade....tons	26,110,816	28,163,005	29,768,021	30,654,432	+ 886,411
Cleared in the foreign trade....tons	26,265,976	28,281,141	29,819,893	30,444,082	+ 624,189

CUSTOMS.

Personal effects of passengers.

Desiring to eliminate cause for complaint resulting from the collection of duty on personal baggage, the Department has endeavored to secure a liberal and equitable administration of the laws on this subject.

Circulars were issued to tourists explaining the law, regulations, and the method of examination to be pursued. Customs inspectors were required to exert themselves to be courteous, to examine carefully all baggage, and to repack whenever it was desired. The Department also issued instructions providing for private examination of baggage of ladies when such examination was requested. Customs officials were instructed to afford passengers ample time to secure currency with which to pay duties. The Department also permitted residents of the United States to bring in duty free foreign articles to the amount of $100, the legal exemption, with little regard to their nature, providing that they were of the same general class purchased by tourists. It was also provided that the head of a family might bring in under the $100 limit, free of duty, presents for his immediate family—*i. e.*, his wife and children—if the aggregate value of the articles did not exceed $100. The Department also granted free reimportation of articles of foreign manufacture, where it could be established that the identical articles had once paid duty and had not advanced in value or improved in condition while abroad. The object of this ruling was to relieve tourists from a second payment of duty on wearing apparel and other personal effects, but was not extended to merchandise.

While these modifications in the rulings have been made, it is held that exempt articles must in a sense be similar—*i. e.*, that they must be of the same general class of articles that tourists ordinarily purchase abroad—and that there is no warrant in any ruling of the Department justifying importation of cigars, spirituous, vinous, or malt liquors, in any other quantity or manner than provided by law; nor is there anything in the rulings to warrant exemption of merchandise, as such, from duties.

Reorganization of districts.

Accompanying this report is a table showing the volume and character of business transacted during the year in each customs district and independent port, including the amounts collected and the cost of collection. It shows that in many districts there is little or no customs business; in many others, owing to the changes in local conditions, the business is of little importance and could be readily

transacted by subordinate officials, under proper direction. The demands for the extension of the customs service elsewhere are pressing. In the interest of economy and good administration, a number of the districts and ports first referred to should be consolidated with contiguous districts of more importance.

Smuggling.

The smuggling of wool and woolen goods concealed in cars apparently containing only paper stock from Canada resulted in important seizures and criminal prosecutions.

A Canadian dealer who made numerous sales of furs to American tourists caused the goods to be smuggled across the frontier for delivery. As the principal could not be reached, his agents in this country were prosecuted, and 163 shipments were seized and appraised at sums aggregating over $20,000.

The extensive smuggling of liquors by Cuban fishing smacks on the west coast of Florida was investigated by an experienced officer, who caused 8 persons connected therewith to be prosecuted criminally, and seized 2 Cuban vessels for forfeiture by legal process.

On the Pacific coast seizures and arrests have been made in opium smuggling cases, and there is a large increase in customs collections in this commodity.

In June last the Attorney-General held to be unconstitutional the provision in section 6 of the antimoiety act of June 22, 1874, requiring persons giving information of customs frauds, in cases where judicial proceedings are instituted, to secure the certificate of the court as to the value of their services, before award of compensation can be made by the Department, the determination of such questions being an executive function; and that the Secretary of the Treasury is authorized to award compensation in such cases, as has been the rule heretofore in instances of fines, penalties, and forfeitures collected without judicial proceedings. This action seems to obviate the necessity for the change in the law recommended in the last annual report.

ALASKA.

Seal herd.

A preliminary report from the agent in charge of the seal fisheries on the Pribilof Islands, Alaska, shows that during the sealing season the lessees of the sealing privilege, the North American Commercial Company, accepted and shipped 22,304 fur-seal skins as the quota for 1902. Of this number, 19,000 were from the island of St. Paul, and included a small number of so-called rejected skins taken in 1901. The number of seal skins taken from the island of St. George

was 3,304, including 61 skins rejected in 1901. As there were only 318 rejected skins on the islands after the close of the season of 1901, it is apparent that 21,986 seals were killed for their skins during the season of 1902. The revenue to be derived from this source will exceed $225,000.

As 22,470 seal skins were taken from the islands in 1900 and 22,672 in 1901, the catch of 22,304 skins in the current year is very gratifying and tends to show that the seal herd is not decreasing in number as rapidly as heretofore.

The consul at Victoria, British Columbia, reports through the Department of State that a British sealing fleet comprising 23 vessels in the spring of 1902 took 1,611 male and 1,562 female seals, in all 3,173, which number is less than one-half of the catch of the same fleet, comprising 28 vessels, in the spring of 1901, and less than one-fifth of the number taken by 33 vessels in the spring of 1900. A preliminary report from the consul at Victoria of the summer catch of the British sealing fleet shows that 11 vessels have returned to that port with 4,456 seal skins. Four other vessels lately arrived and 9 yet to arrive are not included in these figures. The average catch for each vessel for the current year, so far as reported, is 224 skins per vessel. The official report of the catch of the British sealing fleet in 1901, received in March last, shows that 39 vessels took 24,422 seals on the coast of British Columbia and Japan, in the vicinity of Copper Island and in Bering Sea, an average of 626 skins for each vessel. The greatly diminished catch of the British sealing fleet in the last two seasons undoubtedly accounts, in great measure, for the more stable condition of the Pribilof herd, as indicated by the number of seals taken by the lessees of those islands since 1899.

Capt. C. H. McLellan, commander of the revenue steamer *Manning*, reported in July last the finding of a seal rookery on Buldir Island, in the Aleutian group. The skin of a pup seal was taken from this rookery, and experts have pronounced it to be that of the fur seal. It is reasonable to suppose that there are fur seals on other islands of the Aleutian chain. This fact will be determined by investigation during the next season. In the meantime it is suggested that a sufficient appropriation be made to protect the Buldir Island rookery, and any other that may be discovered hereafter, from the unlawful depredations of the seal hunters. If the herd can be left to develop, it may prove valuable; and it will be utterly destroyed by the seal hunters unless protected.

Blue foxes.

There was a great falling off in the catch of blue-fox skins on the Pribilof Islands during the last season, attributable to the mild win-

ter, which allowed the foxes to obtain an ample food supply about the beaches, and rendered it unnecessary for them to visit the traps. The lessees took but 421 fox skins, 26 of them being white.

Salmon fisheries.

A preliminary report from the agent for the protection of the salmon fisheries of Alaska shows that by the aid of the Revenue-Cutter Service substantially all the fisheries, canneries, and salteries in that Territory were inspected during the season of 1902. The total number is 62 canneries and 24 salteries. There has been an increase in the number over those reported last year of 9 new canneries and 14 salteries. Five canneries in course of construction this year are not included in the foregoing figures. The inspection of those in Northern Alaska involved a voyage of 6,782 nautical miles from Seattle, Wash.

The total catch of the Alaska fisheries for the season is estimated at no less than 2,470,000 cases, an increase of nearly 400,000 cases over the pack of 1901. The total value of the pack is over $8,000,000. The take of salmon in Alaska represents about 37,000,000 fish, and provides 118,560,000 pounds of food prepared for the table. The agent reports that the pack of salmon elsewhere than in Alaska for the year 1902 was 1,037,000 cases, and that the aggregate salmon pack of the world this year was 1,000,000 cases less than in 1901. The tax collectible on the salmon pack under the Alaska revenue laws amounts to about $100,000 for the season.

The regulations of the Department requiring the maintenance of hatcheries at every salmon cannery and saltery in Alaska have not been fully complied with. It is declared that the salmon packers are disposed to comply with these regulations, and their failure in instances to do so is attributable to the local difficulties rather than to disinclination. Hatcheries in operation will liberate not less than 120,000,000 salmon for this year—less than one-third the number contemplated by the regulations, which require the liberation of 10 fry for each salmon taken. As the regulation in question was promulgated only two years ago, the result is significant.

The agent in charge suggests that disregard of the law and regulations by salmon canners is trivial in its effects, and that the danger to the industry comes from a multiplication of plants and their fierce competition. He urges the establishment of Government hatcheries as a remedy. Authority for this must come from Congress.

Upon application of those who have established salmon hatcheries, the Department has closed to fishing and set aside certain streams as spawning grounds. The barricades formerly so extensively used have been abandoned, and the fish as a rule have free access to the

spawning grounds. The closed season established by the law is, as a rule, observed. The depletion of the salmon fisheries in Alaska is due to overfishing, upon which the law places no limitation. There is no restriction as to the number of canneries, the number of fisheries to be operated, or the number of boats, men, and gear employed. Purse seines are now used in great numbers, one seine following the other in such quick succession that few fish can pass into the streams. Little or no fishing is done in the streams, but it is done immediately outside the mouth and in the waters approaching the mouth, and it will be seen that an order closing a stream could not be effective, and might work a hardship upon the natives, while others would not be affected.

To regulate and preserve the salmon fisheries of Alaska, the existing law should be entirely remodeled, and the Secretary of the Treasury should be given unquestioned authority to use the widest discretion in all cases when the precise terms of the law might appear to be inadequate or uncertain.

INTERNAL REVENUE.

The receipts from the several objects of taxation under the internal-revenue laws for the fiscal years ended June 30, 1901 and 1902, were as follows:

RECEIPTS FROM INTERNAL REVENUE IN 1901 AND 1902.

Objects of taxation.	Fiscal year ended June 30—		Increase.	Decrease.
	1901.	1902.		
Distilled spirits	$116,027,979.56	$121,138,013.13	$5,110,033.57	
Manufactured tobacco	62,481,907.13	51,937,925.19		$10,543,981.94
Fermented liquors	75,669,907.65	71,988,902.39		3,681,005.26
Oleomargarine	2,518,101.44	2,944,492.46	426,391.02	
Filled cheese	14,652.64	24.00		14,628.64
Mixed flour	6,606.36	2,212.85		4,393.51
Special taxes not elsewhere enumerated	4,165,735.14	4,262,902.32	97,167.18	
Legacies and distributive shares of personal property	5,211,898.68	4,842,966.52		368,932.16
Schedules A and B	39,241,035.32	13,442,792.69		25,798,243.63
Banks, bankers, etc	1,918.00	227.50		1,690.50
Miscellaneous collections	1,531,926.50	1,307,531.20		224,395.30
Total	306,871,069.42	271,867,990.25		35,003,679.17

A detailed statement of the receipts and expenditures will be found in the report of the Commissioner of Internal Revenue.

The amounts given as receipts are those actually collected during the fiscal years mentioned; but in many cases the money collected on the last day of June is not deposited until the first day of July, thus causing a discrepancy between the collections and deposits for the year.

The total cost of collection for the fiscal year ended June 30, 1902, was $4,603,887.82, and for the year 1901, $4,749,220.44, showing a

decrease for 1902 of $145,332.62. The percentage cost of collection for 1902 was 1.70 per cent, as against 1.55 per cent in 1901.

The total production of distilled spirits, exclusive of fruit brandies, for the fiscal year was 128,623,401.9 taxable gallons, against 124,520,599 taxable gallons in 1901, showing an increase in production for the fiscal year just ended of 4,102,802.9 gallons. There were also produced 449,729 gallons of apple brandy, 152,494 gallons of peach brandy, 3,570,197 gallons of grape brandy, 8,662 gallons of pear brandy, 998 gallons of apricot brandy, 508 gallons of berry brandy, 36,528 gallons of prune brandy, 1,236 gallons of fig brandy, and 48 gallons of cherry brandy, making a total production of 4,220,400 gallons from fruits during the fiscal year.

A further comparison of the two fiscal years shows a decrease of 145,249 gallons in production of apple brandy, an increase of 28,795 gallons in peach brandy, an increase of 279,189 gallons in grape brandy, an increase of 4,026 gallons in pear brandy, an increase of 998 gallons in apricot brandy, an increase of 145 gallons in berry brandy, an increase of 3,661 gallons in prune brandy, an increase of 1,185 gallons in fig brandy, and an increase of 48 gallons in cherry brandy.

For the fiscal year ended June 30, 1902, there was an aggregate increase of 172,798 gallons produced from fruits, as compared with the previous fiscal year.

The quantity of distilled spirits gauged during the fiscal year was 412,684,908.1 gallons, against 388,955,771 gallons in 1901, making an increase for the year just ended of 23,729,137.1 gallons.

During the fiscal year 1902, 2,938 distilleries of all kinds were operated. For the preceding fiscal year 3,745 distilleries of all kinds were operated, a decrease of 807 for the year just ended.

During the fiscal year 1902 there were produced 44,550,127 barrels of beer. The number of barrels produced during the fiscal year 1901 was 40,614,258, making an increased production for the year just ended of 3,935,869 barrels.

For the fiscal year 1902 the total receipts from the taxes on tobacco, cigars, cigarettes, snuff, etc., were $51,937,925.19. The receipts from the same sources in 1901 were $62,481,907.13, showing a decrease of $10,543,981.94 for the fiscal year 1902.

DISTRICT OF COLUMBIA.

The net expenditures on account of the District of Columbia for the fiscal year 1902 were $9,363,742. The net revenues deposited in the Treasury on this account for the same period were $4,217,841.43.

Under the operations of the sinking funds, the net reduction of the bonded debt during the year was $871,800, and of the annual

interest charge $43,235.70. Since the close of the fiscal year the debt has been reduced by the purchase of 3.65 per cent bonds for $202,800, and 6 per cent thirty-year funding bonds for $4,100, and will be further reduced by the redemption of thirty-year funding bonds for $494,500 maturing November 1, 1902.

The Treasurer estimates that the sum of $975,408 will be sufficient for interest and sinking fund on the funded debt for the fiscal year 1904, and recommends that this sum be made a permanent annual appropriation until the debt of the District of Columbia shall be extinguished, and also that he be authorized to purchase United States bonds with the funds provided for the sinking fund when he is unable to purchase bonds of the District advantageously. The estimate for interest and sinking fund for 1904 is $238,539.97 less than the appropriation for this purpose for 1903. The Treasurer states that this reduction is made possible by the recent refunding of the 6 and 7 per cent bonds of the District into bonds bearing a lower rate of interest, and their final redemption.

The total amount of the bonded debt at the close of the fiscal year was $14,196,550. Of this sum, $13,683,850 consists of 3.65 per cent bonds.

PNEUMATIC DISPATCH SYSTEM.

The attention of the Congress is invited to the necessity for modern means of communication between the Treasury Department and its various permanent branches as now established in the city of Washington. In the administration of public business it is found necessary to transmit from one building to another hundreds of papers requiring indorsement, signature, or other notation. The present system is inadequate, time consuming, and unsatisfactory. In the interest of efficient public service, it is urged that some modern practical system of pneumatic dispatch be installed. The Department recommends that the system which is now, and has been for some time, in satisfactory operation in the public stores in New York City be introduced throughout the Treasury Department proper, connecting it with the Bureau of Engraving and Printing, the Coast and Geodetic Survey, the Public Health and Marine-Hospital Service, offices of the auditors of the Treasury Department located outside the Treasury building, and the Government Printing Office. The Department expresses confidence that this service once installed will prove efficient, economical, and expeditious.

PUBLIC BUILDINGS.

Congress during the last session authorized the purchase of sites and construction of a large number of buildings. The enlargement and rearrangement of old buildings was provided, to meet increased demands of the public business. The volume of work devolving

upon the office of the Supervising Architect by reason of this recent legislation is the largest in its history.

The act of June 6, 1902, authorized the purchase of additional land in connection with the public buildings at Atlanta, Ga.; Binghamton, N. Y.; Ottumwa, Iowa; Richmond, Va.; Rochester, N. Y.; Rome, Ga.; St. Joseph, Mo.; Sandusky and Youngstown, Ohio; the custom-house property (wharfage) at Wilmington, N. C., and the extension and improvement of the public buildings at Alexandria, Va.; Augusta and Bangor, Me.; Beaumont, Tex.; Buffalo, N. Y. (post-office); Burlington, Iowa; Dallas, Tex.; Fort Smith, Ark.; Greensboro, N. C.; Hartford, Conn.; Jackson, Miss.; Jacksonville, Fla.; Kalamazoo, Mich.; Lincoln, Nebr.; Los Angeles, Cal.; Lynn, Mass.; Macon, Ga.; Memphis, Tenn.; Minneapolis, Minn.; Montgomery, Ala.; Nashville, Tenn.; Norfolk, Va. (court-house and post-office); Paducah, Ky.; Portland, Oreg. (post-office and court-house); Richmond, Ky.; Scranton, Pa.; Springfield, Ill., and Waco, Tex. In addition, a new boiler plant was provided for the marine hospital at Cleveland, Ohio, and the enlargement of the vault facilities at the Bureau of Engraving and Printing in this city.

Special legislation was also enacted during the last session of Congress for the enlargement of the public building at Ellsworth, Me.

Under the Tarsney Act, contracts have been awarded for the erection of the public buildings at Cleveland, Ohio, Indianapolis, Ind., and Baltimore, Md.

At the date of the last report there were 435 buildings. Since June 30, 1901, 2 buildings have been dropped, and there have been authorized 114 new buildings and sites, 22 sites only, 4 marine hospitals, and 5 quarantine stations, making the total at this date 578. Three hundred and seventy-seven buildings are completed and occupied, 11 having been finished during the past fiscal year. Thirty-three buildings are now in course of erection.

STATEMENT OF EXPENDITURES FOR PUBLIC BUILDINGS FOR FISCAL YEAR 1902.

For sites, for construction of public buildings, extensions, and repairs, especially appropriated for	$4,439,736.01
For repairs and preservation of public buildings	330,297.89
For heating apparatus for public buildings	119,554.80
For vaults, safes, and locks for public buildings	17,836.38
For photographic duplication of plans for public buildings	3,968,44
Total	4,911,393.52

The attention of the Congress is called to the necessity for a complete ventilating plant for the Treasury Building. A detailed report, together with estimates for the cost of installation, will be presented by the Department.

HALL OF RECORDS.

It is regretted that provision has not been made for a Hall of Records, the necessity for which has been called to the attention of the

Congress for the past twenty-five years. With the increasing volume of business of the different departments of the Government, the demand for suitable quarters for the storage of records has become more imperative, until now the conditions are such as to interfere materially with the proper transaction of the public business and render valuable archives liable to destruction by fire.

In a communication dated March 3, 1902, addressed to the chairman of the Committee on Public Buildings and Grounds, United States Senate, and printed as Senate Document No. 236, Fifty-seventh Congress, first session, the Department entered into this matter at some length and submitted tentative sketch plans of a building that would meet the requirements.

IMMIGRATION.

The Commissioner-General of Immigration reports that there arrived at ports of the United States during the fiscal year ended June 30, 1902, 648,743 aliens as steerage passengers and 82,055 as cabin passengers, aggregating a total alien immigration of 730,798. This total, however, does not include all the alien arrivals during the period named, as no record is kept of those coming from Mexico and Canada, except such as have come from the last-named country within one year after arrival therein from some transoceanic port.

Of the 648,743 steerage passengers, 608,882 came direct to continental ports of the United States, 9,870 came to ports of the Territory of Hawaii, 792 to those of Porto Rico, and 29,199 to Canadian ports. By comparison with corresponding figures for the preceding year, there has been an increase in steerage immigration of 160,825, and in cabin immigration of 7,105, making a total increase of 167,930.

Of the total of 730,798, European countries furnished 690,472, Asiatic countries 23,082, and all other sources 17,244. As to countries of origin, the principal sources of this large influx of aliens were Italy, which furnished 184,683; Austria-Hungary, 175,900, and Russia, including Finland, 109,721. The total from these three countries, 470,304, constituted nearly 65 per cent of the entire immigration for the year.

The aliens traveling in the steerage were distributed as follows: 466,369 males and 182,374 females; 74,063 were under 14 years, 539,254 from 14 to 45, and 35,426 were 45 and over. A total of $10,485,911 was shown to the inspection officers by this class of aliens, 77,355 of whom exhibited more than $30 each, and 413,705 of whom had less than that amount each. Of the total number, 61,595 had been in the United States before, 4,217 were relieved in hospital, and 465 were returned to their own countries within one year after reaching this country.

As to illiteracy, the report shows that 162,188 were unable to read or write, 2,917 could read but not write, leaving 483,638 who were able to do both.

The total rejections for all causes under the immigration laws were 4,974, or about two-thirds of 1 per cent of the total steerage immigration. The causes of those rejections and the number rejected for each cause were as follows: Idiocy, 7; insanity, 27; pauperism, 3,944; prostitution, 3; contagious disease, 709; convicts, 9, and as contract laborers, 275.

The proportionate increase of diseased aliens was largely in excess of the ratio of increase in immigration for the year, 560 of such arrivals, or almost double the total immigration of this character for the previous year, having been brought to the port of New York. In view of the apparent disregard of the law in this respect by the steamship companies, the Commissioner-General recommends the passage of the legislation, pending before Congress, which imposes a penalty of $100 for each case of willful violation of the law by masters or owners of vessels.

It is further urged that the present alien contract-labor laws are weak and ineffective, as is shown to some extent by the decrease in the number of rejections thereunder to 275, as compared with 327 during the preceding year.

On the Canadian and Mexican boundaries, there were refused admission during the year, for various causes, 5,437 aliens.

The order in which the various races contributed to the steerage immigration is as follows: The Italian, 180,535; Polish, 69,620; Jewish, 57,688; Scandinavian, 55,780; German, 51,686; Slovak, 36,934; Croatian and Slovenian, 30,233; Irish, 29,001; Magyar, 23,610; English, 14,942; Japanese, 14,455; Finnish, 13,868, and all others combined, 70,391.

Attention is called by the Commissioner-General to the increased immigration by way of Canada, aggregating for the year 29,199. He repeats former statements of constant violations of law on the part of aliens of the inadmissible classes who are destined to Canada ostensibly, but ultimately make their way across the boundary into this country. A new contract has been made with the Canadian transportation companies, however, and an officer, with headquarters at Montreal, has been placed in charge of the various inspectors along the Canadian boundary from Sault Ste. Marie, Mich., to Eastport, Me., as a result of which this evil has been checked in a measure. The Canadian Parliament has passed a law excluding from the Dominion aliens suffering with loathsome or dangerous contagious diseases, which will operate as an effective aid in excluding from the United States that class of inadmissible aliens.

There was expended from the immigrant fund during the year in

the administration of the immigration laws the sum of $453,630.79, besides $50,000 from the same source, appropriated by Congress for the construction of the buildings on Ellis Island, New York Harbor, leaving on hand a net balance of $686,265.21. This does not include the cost of enforcing the alien contract-labor laws, which amounted to $141,553.90, leaving an unexpended balance of $8,446.10 of the $150,000 appropriation.

The Commissioner-General calls attention to the evils resulting from congestion of aliens at the large centers of population, and recommends that suitable steps be taken to distribute the arrivals in a manner to supply local demands for their services.

CHINESE EXCLUSION.

In the enforcement of the Chinese-exclusion laws there was expended $219,529.59, leaving a deficiency of $4,529.59. Of this expenditure, $43,480.30 represents the cost of deportation of Chinese persons who have entered the United States in violation of law across the Canadian boundary, and $10,619.79 the cost of deporting those who entered unlawfully at other points. The total number thus deported was 596, of whom 387 came from Canada and 209 from other sources. There was expended for salaries and expenses of officers and miscellaneous items the sum of $165,429.50.

As members of the excepted classes mentioned in Article III of the treaty of December 8, 1894, 1,504 Chinese applied for admission, of whom 1,257 were admitted by administrative officers, 16 were admitted by the courts on habeas corpus proceedings, 3 were held in hospital under bond, 217 were returned to their own country, and 11 are awaiting final action.

Of 2,455 who applied for permission to pass through the United States to foreign countries, 2,306 were granted that privilege, 24 were released from the custody of the transportation companies by the courts, 6 escaped, and 119 were refused permission.

During the year, 2,054 registered Chinese laborers departed from this country, and 2,495 returned thereto.

The Commissioner-General recommends an increased appropriation to defray the expense of maintaining an efficient guard along the line separating Mexico from the United States to prevent the unlawful crossing of Chinese persons into this country. It is also recommended that the Bertillon system should be adopted, by which a record of the physical characteristics of aliens may be kept for the identification of such as seek to gain access to this country unlawfully after having been once rejected.

There are various other matters of importance in regard to the efficient administration of the Chinese-exclusion and immigration

laws which are discussed in detail in the report of the Commissioner-General, to all of which the attention of the Congress is respectfully called.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

As recommended in the last report of the Secretary of the Treasury, the Congress passed an act to increase the efficiency and change the name of the Marine-Hospital Service, which was approved by the President July 1, 1902. Under this act, the title of the Service was changed to that of Public Health and Marine-Hospital Service of the United States. This measure materially broadens the scope of the Marine-Hospital Service, giving it the name as well as the functions of a public-health service.

National quarantine.

The Surgeon-General reports that during the year there were 5,828 vessels inspected and 420 vessels disinfected at national quarantine stations in the United States. At the close of the fiscal year, June 30, 1902, the Service owned 19 complete maritime quarantine stations, and 18 stations where inspection of incoming vessels is conducted by officers of the Service, making a total of 37 domestic quarantine stations. In addition to these national stations, there are 8 disinfection stations and 12 inspection stations conducted by State or municipal authority within the boundary of the United States.

In January, 1902, the quarantine functions at Portland, Me., were transferred to and accepted by the Service. This was done in accordance with act of Congress approved February 15, 1893, in like manner as the quarantine service at Savannah, Ga., was acquired in April, 1899, and the maritime quarantine stations of the State of Florida in August, 1901. Provision was made in the sundry civil bill, approved June 28, 1902, for the purchase of the quarantine stations of the State of Florida which were thus transferred.

Texas border quarantine.

To prevent the introduction of yellow fever, smallpox, and typhus from the Republic of Mexico, land quarantines have been maintained at El Paso, Eagle Pass, and Laredo, Tex., and the officers engaged in this work have cooperated with the United States Immigration Service. At these stations over 50,000 passengers were inspected, of whom 25 were detained for observation and their baggage disinfected.

Smallpox.

During the year smallpox was reported as occurring in 44 States and Territories of the Union. The number of cases reported for the

year ended June 30, 1902, was 55,857. The deaths were 1,852, a mortality of 3.31 per cent as compared with 38,506 cases and 689 deaths during the year ended June 30, 1901.

As in previous years, the Service has rendered assistance to State and local boards of health by detailing officers to advise and assist the States in formulating and putting into execution proper regulations to suppress and prevent the spread of smallpox.

On account of the outbreak of smallpox at nearby points in New Brunswick, Canada, and at the request of the State board of health of Maine, a temporary border quarantine station was established at Vanceboro, Me., and a maritime station at Eastport, Me., the latter being still in operation.

Plague.

Bubonic plague, the existence of which in San Francisco was first reported March 8, 1900, and confirmed by a commission appointed by the Department consisting of 3 bacteriologists of the highest reputation, continues to be reported despite the amount of work which was done last year for the purpose of its eradication from Chinatown in that city, and which work covered, as stated in last year's report, the disinfection of over 14,000 rooms under the supervision of an officer of this Service. There have been reported up to August 31, 1902, 70 cases as occurring since March 8, 1900, and during the months of July and August of the present year 14 cases were reported. Nine cases were reported in September and 7 in October. In continuance of the plan adopted last year, the Service has maintained its organization at San Francisco, which has continued its work of assisting the local board of the city by examination of the sick and dead in the infected locality, reporting all suspicious cases that have occurred. Cases confirmed by bacteriological examination have been published regularly in the public health reports of the Service.

This disease has been reported during the fiscal year 1902 in the following-named countries: Australia, Brazil, British South Africa, China, Egypt, England, France, Hawaiian Islands, India, Italy, Japan, Madagascar, Mauritius, Mozambique, Paraguay, Philippine Islands, Russia, Scotland, Spain, Straits Settlements, and Turkey.

Leprosy.

The report of the commission of medical officers of the Marine-Hospital Service, appointed under the act of March 2, 1899, regarding the prevalence of leprosy in the United States, was submitted to Congress at its last session, and has been published.

The recommendation of the commission, approved by the Surgeon-General, for the establishment of a national leprosarium meeting

with approval of the Department, a bill will be submitted for the consideration of Congress.

Yellow fever.

No yellow fever was reported in the United States during the past year. Reports have been received of the existence of this disease in Brazil, United States of Colombia, Costa Rica, Cuba, Dutch West Indies, Haiti, Mexico, and Salvador. Mexico has furnished a large proportion of cases during the past year, and Cuba, which has heretofore reported annually a large number, had only 61 cases and 14 deaths from yellow fever during the six months ended December 31, 1901, and 1 case and no death for the six months ended June 30, 1902, and this one was represented as imported.

The plan of an international agreement of American Republics in the interest of sanitation, which was recommended by the Surgeon-General to the chairman of the United States delegation for presentation to the conference of American States, which convened in the City of Mexico October 22, 1901, was modified, and, as modified, was favorably acted upon. Resolutions were adopted for the organization of an international sanitary conference of the American States. In accordance with these resolutions, the first of the conferences will be held in Washington, D. C., December 2, 1902. The delegates on the part of the United States have been appointed and a plan of organization and a tentative program submitted.

The yellow-fever institute, mention of which was made in the last report as having been organized by the Surgeon-General for the purpose of investigating questions concerning yellow fever, has continued its work. A working party at Vera Cruz, Mexico, has been engaged in the investigation of the etiology of this disease.

Foreign and insular quarantine and immigration.

Maritime quarantine has been conducted in Cuba, Porto Rico, Hawaii, and the Philippines.

The severe outbreak of cholera in the island of Luzon has necessitated the maintenance of a stringent quarantine on outgoing vessels from Manila to the uninfected ports of the Philippines, as well as those of the United States and its insular possessions. The recently fitted up Mariveles quarantine station, across the bay from Manila, has been of the greatest assistance in the detention, disinfection, and observation of the personnel of vessels on which cholera has appeared. Quarantine of five days has been imposed on army transports before sailing for the United States.

Acting assistant surgeons are stationed at Iloilo and Cebu.

There are 5 fully equipped quarantine stations in Cuba—at Havana, Matanzas, Nuevitas, Santiago, and Cienfuegos. Until May 20, when the United States formally transferred the government of Cuba to the Cuban Government, there were 14 inspecting stations operated by the Service, in charge of acting assistant surgeons. Since May 20 the accredited medical officers of the Service have been attached to the consulates of their ports. While the quarantine inspection of incoming vessels has been turned over to the Cuban authorities at these five ports since May 20, 1902, all vessels departing for the United States ports are still inspected and certified to by medical officers of the Service.

The quarantine service in Porto Rico has been conducted upon the same lines as for the previous fiscal year. The disinfecting barge *Argus* has been sent to Ponce to be used for the disinfection of vessels. Miraflores Island, at San Juan, P. R., has been recently transferred by Executive order to the Service, and is now used as a quarantine station.

Litigation over the title of the Service to the quarantine station at Honolulu having been finally settled, necessary improvements contemplated can now be made.

Medical officers have been stationed at the ports of London, Liverpool, and Naples, at Quebec, Canada, and Halifax, Nova Scotia. During the active quarantine season, medical officers were stationed at the seven fruit ports of Central and South America to inspect fruit vessels departing for United States ports. Officers have been on duty at Yokohama and Kobe, Japan; Hongkong, China; Rio de Janeiro, Brazil, and Vera Cruz, Progreso, and Tampico, Mexico, and one has been recently sent to Shanghai, China. There is also a sanitary inspector at Nagasaki, Japan.

The medical inspection of immigrants was performed at 32 ports during the year by the medical officers of the Service detailed for that purpose; also at the ports of the islands of Porto Rico and Hawaii. Immigrants were also inspected at Quebec, Canada, and Halifax, Nova Scotia. Emigrants leaving Naples and Palermo for the United States are inspected by a medical officer stationed at the first-named place.

Marine hospitals and relief.

The Surgeon-General reports that 56,310 sick and disabled seamen of the merchant marine were treated during the fiscal year, of whom 12,927 were in hospitals.

The Service controls and operates 23 hospitals, of which 21 are owned by the United States and 2 are leased buildings. In addition to the hospitals, there are 120 relief stations where seamen receive hospital and dispensary treatment. Relief stations have been established at Houghton, Mich., Hoquiam, Wash., and Sheboygan, Wis.

New hospitals.

As recommended in the last annual report, provision was made by the Congress for a marine hospital at New York, N. Y., by an appropriation of $250,000 for the purchase of the site and building now occupied, or purchase of a new site and erection of a building. Negotiations to that end are now in progress.

Congress also authorized and made appropriations for marine hospitals at Buffalo, Pittsburg, and Savannah, and measures have been taken toward selecting the sites and erecting the buildings for the same.

Sanatorium for consumptives, Fort Stanton, N. Mex.

The relief transactions of this station have increased to a marked degree, 212 patients having been treated during the year, an excess of 60 over the previous year.

The Surgeon-General invites the attention of the Congress to the expediency, as a sanitary and prophylactic measure, of receiving upon the large reservation now at the disposal of the Service at Fort Stanton such cases of tuberculosis as may be sent there for treatment by State health authorities upon the payment of a per diem rate, to be based upon the cost of maintenance of the patients. He declares that this measure would probably result in the cure of many ill with a disease incurable under general conditions of environment, and would diminish centers of infection established by these patients in their homes, and that such a provision would materially aid in the well-directed efforts now being made for the suppression of the disease in the United States.

Aid to other services.

During the year the Service has extended aid to other branches of the Government as follows: To the Revenue-Cutter Service, in the physical examination of 800 applicants for enlistment, 145 of whom were rejected; to the Steamboat-Inspection Service, in the examination as to visual capacity of 1,759 pilots, of whom 85 were rejected; to the Life-Saving Service, in the physical examination of 1,045 surfmen, of whom 58 were rejected; to the Immigration Service, in the medical inspection of 746,297 immigrants arriving at the various ports of the United States and Cuba; to the Coast and Geodetic Survey and Light-House Service, in the physical examination of 27 applicants for enlistment, of whom 1 was rejected.

Personnel.

At the close of the fiscal year the commissioned corps of the Service consisted of 105 commissioned officers (including the Surgeon-

General), 29 surgeons, 27 passed assistant surgeons, and 48 assistant surgeons. During the year 1 surgeon resigned, 1 passed assistant surgeon was promoted to the grade of surgeon, and 5 assistant surgeons were promoted to the grade of passed assistant surgeon. At the close of the year there were 181 acting assistant surgeons, 2 sanitary inspectors, 46 pharmacists, and 539 hospital and quarantine attendants.

Expenditures.

The balance of the appropriation for the expenses of the Marine-Hospital Service at the commencement of the fiscal year was $726,752.74, and the receipts from all sources $908,435.54. The net expenditures were $956,434.69, including expenditures for improvements of marine hospitals and grounds and for repairs, heating apparatus, furniture, fuel, light, and water, these items having been excluded by the Congress from participation in the annual appropriation and made payable from the marine-hospital fund.

The amount available of the appropriation for preventing the spread of epidemic diseases July 1, 1901, was $799,561.81, and the expenditures for the fiscal year $145,471.71, leaving a net balance July 1, 1902, of $654,090.10.

Hygienic laboratory.

The laboratory building appropriated for by act approved March 3, 1901, is now in course of construction.

On account of the importance of bubonic plague in its relation to the public health, studies upon this disease were continued throughout the year in the laboratory, and many doses of the Haffkine prophylactic were made and distributed to quarantine stations in the United States, as well as to our possessions in the Philippine Islands and Hawaii. The laboratory investigated, from a bacteriological and pathological standpoint, many specimens from suspected cases of plague sent from the various quarantine stations, and a thesis is to be published upon this subject.

As rats assist in spreading the plague, special experiments were made with a microbe said to be pathogenic for these animals, and the result of the experiments has been published.

Horses were treated in an endeavor to procure curative and preventive serums for yellow fever, plague, typhoid fever, and pneumonia.

In view of the importance of trachoma and its frequency among immigrants coming into the United States, the laboratory is making special investigation as to its nature, cause, and treatment.

Much work was done throughout the year upon disinfection and disinfectants. Disinfection against mosquitoes was given special attention last summer on account of the relation of these insects to

the spread of various diseases, particularly malaria and yellow fever, and a bulletin was published on this subject. Tuberculosis, car sanitation, and smallpox have also received the attention of the workers in the laboratory, and reports upon the first two of these subjects have been published.

The Surgeon-General has reported that an additional building will be required for the laboratory, and the favorable action of the Congress thereon is recommended.

REVENUE-CUTTER SERVICE.

The following is a summary of the work performed by vessels of the Revenue-Cutter Service for the year ended June 30, 1902:

Lives saved (actually rescued) from drowning	55
Persons on board vessels assisted	645
Persons in distress taken on board and cared for	538
Vessels in distress assisted	101
Vessels boarded and papers examined	22,567
Vessels seized and reported for violation of law	191
Fines and penalties incurred by vessels reported	$45,182.50
Value of vessels assisted and their cargoes	$2,224,089.00
Distance covered in nautical miles	294,173.05

Services.

The general and specific duties imposed by law upon this Service are of such character that they can never be narrowed, but must broaden and find new channels with the growth of commerce and the country, to meet new demands which are yearly being added to its field of usefulness, while in time of war it becomes, under the provisions of law, a part of the naval establishment by cooperation for offensive and defensive operations.

Every year, in aid of commerce, the value of property saved is far in excess of the sum annually appropriated for its maintenance. In the year just closed the value of property which the Service assisted in saving is shown to have been $2,224,089. The total appropriation for its maintenance for the year was $1,240,000.

There have been in active commission throughout the year 37 vessels, embracing 24 cruisers and 13 vessels on harbor service; and 12 officers of all grades have been on detached duty, in connection with the construction and repair of vessels for the Service.

For inspecting, drilling, and disciplining crews of the Life-Saving Service and the superintendence of construction of life-saving stations, 13 officers of the Revenue-Cutter Service have been constantly on duty, under the direction of the General Superintendent of the Life-Saving Service.

Vessels.

In recent annual reports of the Secretary of the Treasury, the kind and character of vessels composing the fleet of revenue cutters

and the necessity for providing new ones have been urgently and carefully represented to Congress. Referring to this subject in his last annual report, my immediate predecessor said:

Attention is again invited to the absolute necessity for providing a number of new vessels to replace old ones of the fleet. The old, obsolete, and in other respects inefficient vessels in the Revenue-Cutter Service are a source of constant anxiety, not only because they are not adapted to the work of the Service and can not be depended upon in emergencies, but because the annual expenditures required to keep them afloat and in commission can only be justified upon the ground that the active presence of cutters on stations is essential to the public interests. These vessels are anything rather than efficient revenue cutters; they are discreditable to the Department and furnish subject for criticism. Of this class are the following:

The *Woodbury*, constructed in 1864: Original cost, $92,000; since for repairs, $94,339; total cost to June 30, 1901, $186,339.

The *McLane*, purchased in 1865: Original cost, $36,000; for repairs, $117,876; total cost to June 30, 1901, $153,876.

The *Hamilton*, constructed in 1871: Original cost, $65,000; for repairs, $103,567; total cost to June 30, 1901, $168,567.

The *Boutwell*, constructed in 1873: Original cost, $70,000; for repairs, $54,490; total cost to June 30, 1901, $124,490.

It is plain that further expenditures on these old vessels should not be continued longer than it will take to provide new ones to supply their places. It is therefore recommended that new vessels be constructed to replace those above named, at a cost for each of $175,000. This will require an appropriation of $700,000.

There is undoubtedly great need of new vessels of modern construction to meet the exigencies of the Revenue-Cutter Service. The subject of the necessity for new vessels for this Service has been called repeatedly to the attention of the Congress. It is urged that the sum of $875,000, sufficient for the construction of at least 5 vessels, to replace the same number of old craft now in the Service, be appropriated and made immediately available.

Bering Sea and Alaska.

The annual cruise for the protection of the seal herd by the cutters *Bear*, *Thetis*, and *Manning*, designated by the President for the purpose, was in course of execution at the close of the year.

The cutter *Perry* was dispatched to visit the salmon fishing grounds and canneries on the coast of Alaska from Sitka to Bristol Bay, while the *Rush* performed like duty from Sitka through Southeastern Alaska. Each of these vessels had on board an authorized agent of the Government for the supervision of the industries indicated.

The North Pacific and Bering Sea patrol has been maintained as usual, but reports covering the work done have not been received.

Personnel.

The act approved April 12, 1902, recognizes the military character of the Revenue-Cutter Service, places its officers upon an equal foot-

ing with those of the Army and Navy, confers upon its commissioned personnel rank, pay, and allowances of officers of the Army up to and including the grade of major, U. S. Army, and provides for retirement from active service because of age or physical infirmities, on the same lines with the provisions of law in force for the other military services.

The law will be undoubtedly of great aid in the improvement of the efficiency of the Revenue-Cutter Service. There have been retired from active service since the approval of the measure 9 captains and 5 chief engineers because of age, 64 years; 1 chief engineer, 1 third lieutenant, and 2 second assistant engineers because of physical disability.

Pensions.

Attention is invited to the following language of my immediate predecessor, in his annual report for the fiscal year ended June 30, 1897:

Under the provisions of section 4714, Revised Statutes, the officers and seamen of the Revenue-Cutter Service who may be wounded or disabled in the discharge of their duty "while cooperating with the Navy by order of the President," may be placed upon the Navy pension list.

The ordinary duties devolved upon the Revenue-Cutter Service are fraught with greater risk of life and limb than that incurred by the Army, Navy, and Marine Corps in time of peace, while in time of war they are at least equal, and every argument that applies as a justification for extending this bounty to those services has equal force on behalf of the enlisted men of the Revenue-Cutter Service. I therefore recommend that the law, section 4714, Revised Statutes (act of April 18, 1814), be amended to read as follows:

"The enlisted men of the Revenue-Cutter Service of the United States, who have been or may be wounded or disabled while in the actual discharge of their duties, shall be entitled to be placed upon a pension list, under the same regulations and restrictions as are now provided by law for enlisted men of the Navy."

The statute sought to be amended by the above recommendation has been in force since 1814, or eighty-eight years. There is no provision of law under which enlisted men of the Revenue-Cutter Service can be provided for in the event of their disablement in the line and performance of duty in time of peace. Some provision should in fairness be made, and it is hoped that section 4714, Revised Statutes, may be amended as indicated.

NAVIGATION.

On June 30, 1902, the merchant marine of the United States, including all kinds of documented shipping, comprised 24,273 vessels, of 5,797 902 gross tons. On June 30, 1901, it comprised 24,057 vessels,

of 5,524,218 gross tons. The following table shows the geographical distribution, motive power and material of construction, and trade of vessels of the United States for the fiscal year 1902, compared with the fiscal year 1901, and also the construction for the two years:

COMPARISON OF 1901 AND 1902.

	1901.		1902.	
	Number.	Gross tonnage.	Number.	Gross tonnage.
GEOGRAPHICAL DISTRIBUTION.				
Atlantic and Gulf coasts	16,744	2,849,342	17,040	2,978,876
Porto Rico	25	5,297	42	6,180
Pacific coast	2,387	676,682	2,492	741,825
Hawaiian Islands	64	37,149	61	32,386
Northern lakes	3,253	1,706,294	3,172	1,816,511
Western rivers	1,584	249,454	1,466	222,124
Total	24,057	5,524,218	24,273	5,797,902
POWER AND MATERIAL.				
Sail: *a*				
Wood	16,469	2,340,908	16,367	2,347,977
Iron and steel	174	262,357	179	273,051
Total	16,643	2,603,265	16,546	2,621,028
Steam:				
Wood	6,214	1,282,293	6,443	1,270,046
Iron and steel	1,200	1,638,660	1,284	1,906,828
Total	7,414	2,920,953	7,727	3,176,874
Canal boats	735	83,068	703	79,408
Barges	2,677	586,840	2,770	599,742
Total	3,412	669,908	3,473	679,150
TRADE.				
Registered:				
Steam, iron and steel	161	366,617	155	398,135
Steam, wood	194	63,105	186	60,690
Sail, wood and iron and steel *a*	972	459,407	885	423,730
Total	1,327	889,129	1,226	882,555
Enrolled and licensed:				
Steam, iron and steel	1,039	1,272,043	1,129	1,508,693
Steam, wood	6,020	1,219,188	6,257	1,209,356
Sail, wood and iron and steel *a*	15,671	2,143,858	15,661	2,197,298
Total	22,730	4,635,089	23,047	4,915,347
CONSTRUCTION DURING THE YEAR.				
Geographical distribution.				
Atlantic and Gulf coasts	823	236,948	973	237,063
Pacific coast	271	54,568	224	53,059
Northern lakes	175	169,085	133	168,873
Western rivers	311	22,888	161	9,836
Total	1,580	483,489	1,491	468,831
Power and material.				
Sail:				
Wood	514	104,419	578	89,292
Steel	12	21,746	3	8,406
Steam:				
Wood	405	37,463	477	37,246
Iron and steel	101	236,128	102	270,932
Canal boats	79	9,078	44	4,539
Barges:				
Wood	465	69,830	285	57,392
Steel	4	4,825	2	1,024
Total	1,580	483,489	1,491	468,831

a Including barges and canal boats.

American shipping was greater in volume on June 30, 1902, than ever before in our history. The tonnage losses of the civil war have been more than made good. New vessels of the year have been of superior types, including the largest transatlantic steamer ever built in the United States, the fastest steamer for Asiatic trade yet built in any country, and the largest steamer ever launched into the waters of the Pacific.

The total tonnage completed was a trifle less than in 1901, but the shipbuilding in progress during the year, in the value of materials and amount of wages, has never been equaled in this country. If the rate of progress during the past few years could be maintained, the United States would in time become a competitor with Germany for the second place as a shipbuilding nation. The outlook for the current fiscal year is not, however, so promising. A large amount of unfinished tonnage will be launched and completed. Few new contracts for ocean steamers have been reported.

The growth of American shipping has been entirely within the domestic trade. The tonnage registered for foreign trade is smaller than a year ago, but it is more efficient, as the proportion of steamers has increased. American vessels carried 8.8 per cent of our exports and imports, a small gain over the percentage of 1901. These modest figures show the small share of our national shipping in our foreign trade, but they fall far short of showing the place held by American capital in ocean navigation.

For several years American capital in increasing amounts has been invested in ocean steamers under foreign flags. Recently this movement has taken form in the organization of an American steamship company, which, in the tonnage, average speed, and size of its steamers, equals any two combined of the world's great steamship companies. Yet, only an insignificant proportion of this company's tonnage—about one-eighth—is under the American flag. The tendency noted and the organization of this company show conclusively that abundant American capital is disposed to engage in commercial enterprises on the sea, and that, under existing conditions, the ready outlet for it is afforded by resort to foreign flags. American capital prefers investment under foreign flags because it costs more to build ocean steamers in the United States than abroad, and, once built, it costs more to operate steamers under the American than under foreign flags. Only steamers built in the United States are entitled by law to fly our colors. If foreign-built steamers were admitted to American registry, the handicap of higher wages for crews shipped in American ports would remain. The Department's conclusions and the facts and considerations upon which they have been based have been set forth in detail in former reports.

Tonnage taxes collected during the past fiscal year amounted to $868,783.91, compared with $903,138.88 for the previous year. Even with increasing commerce, the total tonnage taxes under existing law may decline, as regular lines of steamers continue to supersede "tramp" services. The Commissioner of Navigation points out that under our present law the passage of a bill pending in the British Parliament may reduce our receipts from tonnage tax about 32 per cent. His recommendation for a refund of additional taxes necessarily imposed on a few Cuban vessels for a few weeks after the establishment of the Republic is indorsed.

Congress should provide American registry for vessels owned in the Philippines, as it has provided for the American registry of vessels owned in other acquisitions of the United States. If desired, a bill for this purpose will be submitted at this session, to allow ample time for a full understanding of its effect and for the establishment of the necessary administrative machinery before July, 1904.

Shipping commissioners are now established at 22 seaports. Last year 176,836 seamen were shipped, reshipped, and discharged by these officers at a cost to the Government of $58,988.36. The Supreme Court has decided that the rent and necessary office expenses of shipping commissioners are a legitimate charge on the Treasury. An item of $9,000 for this purpose is included in the estimates.

The report of the Commissioner of Navigation refers in detail to the matters mentioned and to others, and the attention of the Congress is invited to its statements and recommendations.

STEAMBOAT-INSPECTION SERVICE.

The expenses of the Service were, for salaries, $303,796.61, an increase over the previous year of $5,894.43; for contingent expenses, $56,259.25, an increase over the previous year of $797.55. This increase is due to the fact that additional assistant inspectors were found necessary at San Francisco, Cal., and Seattle, Wash., and to the largely augmented commerce incident to gold discoveries in Alaska. The number of sail vessels inspected at San Francisco was 118, and at Seattle, 57. The increase in contingent expenses was incidental to the increased number of inspections.

The number of vessels inspected and certificated was 9,261, with a total gross tonnage of 5,293,526, an increase in number of vessels inspected of 88 and of tonnage 450,299 over the previous year.

Of the number of certificates issued, 367 were to foreign passenger steamers, with a gross tonnage of 1,587,076; 138 to motor vessels, with a tonnage of 6,021; 599 to sail vessels, with a tonnage of 578,579.

The number of officers to whom licenses are issued by the Service is estimated to be about 40,000. The number issued during the past year was 20,108, of which probably about 17,000 were renewals of five-year licenses issued in the first half of the fiscal year ended June 30, 1897, the remainder being for original licenses.

Under the act of January 22, 1894, there were tested at the mills where manufactured 5,958 steel boiler plates for marine boilers, of which number 674 plates were rejected. There was an increase over the previous year of 121 in number of plates tested and inspected and an increase of 17 in plates rejected.

ANNUAL CERTIFICATES OF INSPECTION ISSUED TO FOREIGN STEAM VESSELS BY THE INSPECTORS DURING FISCAL YEAR 1902.

Nationality.	Number.	Gross tonnage.	Nationality.	Number.	Gross tonnage.
British	217	837,297	Spanish	6	25,920
German	52	376,791	Cuban	5	10,769
Norwegian	21	20,808	Danish	4	19,311
Italian	14	56,228	Portuguese	3	8,395
Dutch	13	63,218	Chilean	1	2,640
French	12	73,974			
Belgian	10	41,105	Total	367	1,587,076
Japanese	9	50,620			

The above 367 certificates of inspection were issued by the inspectors to 361 foreign steam vessels, with a total of 1,573,963 gross tons, 6 of which steamers—the *Toronto*, inspected at New York, N. Y.; the *Aorangi*, at Seattle, Wash.; the *Minnie M.* and *Ossifrage*, at Marquette, Mich.; the *Alexandria*, at Buffalo, N. Y., and the *Managua*, at Mobile, Ala.—were twice certificated by the inspectors during the year.

The increase in annual certificates issued to foreign steam vessels over previous year was 26, and there was an increase over the previous fiscal year of 210,833 in gross tonnage of foreign steam vessels certificated.

There were 55 accidents to steamers involving loss of life, 8 more than in the previous year, and the number of lives lost was 445, an increase over the previous year of 105.

COAST AND GEODETIC SURVEY.

The appropriations for the United States Coast and Geodetic Survey on account of the fiscal year 1902 amounted to $832,845. Of this amount, the sum of $210,245 was for pay of officers and men to man and equip the vessels of the Survey, and $54,600 for repairs and maintenance of vessels. The sum of $34,500 was for office expenses, including installation of a new electrotyping plant. The remainder of the appropriation was about equally divided between expenses of parties in the field and salaries of the field and office forces.

Hydrographic and topographic surveys were made in 12 States. In Alaska, surveys were continued in Icy Straits and Cross Sound, in Prince William Sound, and in the principal passes through the Aleutian Islands into Bering Sea.

In Porto Rico, hydrographic work was continued in the harbors and bays and offshore. The triangulation around the island and topographic survey along the shore line were completed.

In the Hawaiian Islands, the work of separating the records relating to the coast survey from the Land Office records was continued and a list of the geographic names used in the islands was completed.

The director of coast surveys in the Philippine Islands, an officer of this Bureau, in cooperation with the Insular Government, has continued the important work of charting the imperfectly known waters of the archipelago. Detached surveys, based upon astronomical determinations, and including base measure, triangulation, topography, hydrogaphy, and tide observations, have been made at various points, and many additional telegraphic longitudes have been determined. Magnetic observations were continued. The work in the Manila office was executed with promptness and dispatch, the total output amounting to 18 new charts and 2 new editions of charts formerly published. Sailing directions for the north and west coasts of Luzon were prepared and sent to the printer.

Good progress has been made with the general magnetic survey, and observations were made at 149 new stations in 12 States and Territories, including Alaska, Porto Rico, Hawaii, and the Philippine Islands. A magnetic observatory has been established at Sitka, Alaska, and Honolulu, Hawaii, and a continuous record of the changes in the earth's magnetism is now obtained at these two points, and also at Cheltenham, Md., and Baldwin, Kans. Special observations have been made at each of these observatories on the 1st and 15th of each month since January 1, 1902, at the formal request of the German Government, in order to cooperate with the foreign observatories in international magnetic work during the time of the various antarctic expeditions which have been sent out from Germany and Great Britain.

The special report on "The Eastern Oblique Arc of the United States" has been published and distributed. Part IV A of the Manual of Tides, "Outlines of Tidal Theory," was issued as an appendix to the annual report for 1900. The Coast Pilot from Dixon Entrance to Yakutat Bay was also issued. The Coast Pilot of Chesapeake Bay and its tributaries was revised and printed, and the regular monthly notices to mariners were issued. A chart showing the lines of equal magnetic declination on January 1, 1902, was compiled and issued. The current work in the office of the Survey was kept up to date.

Continuous tide observations with automatic gauges were maintained at 8 stations, including 1 station in Hawaii and 1 in the Philippine Islands.

Satisfactory results have been obtained during the year at the latitude observatories maintained under the direction of the Survey at international expense at Gaithersburg, Md., and Ukiah, Cal., for the purpose of measuring the variations of latitude.

One officer continued on duty as a member of the Mississippi River Commission. The two officers appointed by the United States Supreme Court as members of the commission to retrace and mark the boundary line between the States of Virginia and Tennessee continued this work, and one officer continued the resurvey of Mason and Dixon's Line under an assignment requested by the commission of the States of Maryland and Pennsylvania.

NATIONAL BUREAU OF STANDARDS.

The National Bureau of Standards was established July 1, 1901, by the act of March 3, 1901. In addition to the equipment of the old Office of Standard Weights and Measures, $10,000 was provided for apparatus and $5,000 for general expenses, including books and periodicals. The work of the first fiscal year included the preparation of plans for the new buildings of the Bureau, the development of some of the new work of the Bureau, and the current testing, including chiefly the testing of lengths, masses, thermometers, electrical resistances, and optical instruments.

As stated in the last report, there are to be two laboratory buildings erected for the use of the Bureau on a suitable site situated near the intersection of Connecticut avenue and the Pierce Mill road, about 3 miles northwest from the Capitol.

It was found necessary to exceed the original appropriation of $250,000 in order to provide a sufficient capacity in the mechanical laboratory, and accordingly Congress at its last session extended the limit of expenditure for the two buildings from $250,000 to $325,000 and added $30,000 for equipment. New apparatus to the extent of the $10,000 available has been purchased and considerable time expended in laying out new work for the next fiscal year.

On account of the pressure of other work in the office of the Supervising Architect, the plans of the new buildings for the Bureau have been delayed, the contract for the mechanical laboratory not being made until late in June, 1902, while the plans of the physical laboratory are still unfinished. The mechanical laboratory is to be finished September 1, 1903, while the physical laboratory will probably be completed about eight months later. On account of this unexpected delay, permission was secured from the Congress to rent the

4-story building on New Jersey avenue SE. as a temporary laboratory and instrument shop. The building was accordingly occupied on July 1, 1902. It affords reasonably convenient facilities for a small instrument shop and for laboratory work in alternating currents and high-temperature measurements.

The enlarged facilities of the Bureau have made it possible to do a greater amount of testing during the year than did the former office of Standard Weights and Measures. Nevertheless, the demands upon the Bureau by manufacturers of scientific apparatus and of machinery and others have been far in excess of what could be met, and not until the new buildings are fully equipped and the personnel largely increased can the demands for information and testing be filled.

Metric system.

Attention is again called to the necessity for a reform in our present system of weights and measures. The greater part of the world has already adopted the international decimal system. The many advantages to be gained by the introduction of such a system in place of the several heterogeneous systems now in use, none of which are decimal or international in character, would prove of the greatest value to the manufacturing, commercial, scientific, and educational interests of the country. It is believed that the introduction of the international or metric system of weights and measures in the departments of the Government, allowing a reasonable time for the change, will not only greatly facilitate the work of these departments, but will bring about its general adoption by the public without further legislation.

LIGHT-HOUSE ESTABLISHMENT.

The annual report of the Light-House Board contains a full statement of the operations conducted under the Light-House Establishment and of its present condition and future needs. It is a growing service, as it must necessarily keep pace with expanding commerce by responding to its demands for the various forms of aids to navigation.

The advance in the cost of materials, higher wages for labor, and the operation of the eight-hour law, and of the tariff under which the Light-House Establishment is required to pay a duty on all of its importations, especially lens apparatus, upon which from 45 to 60 per cent is charged, increase the cost of maintaining the light-houses and light-vessels much beyond that of former years. This Department in its letter dated January 30, 1902, to the Speaker of the House of Representatives, a copy of which appears in the annual report

of the Light-House Board, has suggested that the law operating heretofore, but which is made inoperative by a decision of the Comptroller of the Treasury, be again enacted, by which importations for the Light-House Establishment for light-house purposes be admitted hereafter free of duty.

There are now in operation 1,332 light-stations. Others are in process of construction, and recommendation has been made by the Light-House Board that appropriations be made for the building of others. In this connection, the Department urges upon the attention of Congress the necessity for liberal appropriations, inasmuch as economy and business reasons require that all light-houses hereafter constructed shall be of the latest and most improved type. The Department wishes to reiterate the folly of anything but the highest standard in the construction and equipment of such vital aids to commerce as light-houses and light-ships.

The appropriation for supplies of light-houses for 1903 was $475,000. The Department approves the recommendation of the Board that $502,886 be appropriated, to be expended for that purpose during the next fiscal year, this amount being based on careful calculation as to actual needs.

The appropriations for the repair, etc., of light-houses have not kept pace with those for the establishment of new light-houses. The light-stations, especially those established in the early days of the Service, require that much should be done to keep them in working order. The Department approves the Board's recommendation that $825,000 be appropriated for the repair, etc., of light-houses during the next fiscal year.

The increase in the number of light-houses makes an increase in the number of light-keepers necessary. For the last fiscal year Congress appropriated $809,000 for not exceeding 1,650 keepers. For the present fiscal year an appropriation of $833,000 is necessary.

The Board reports commendable progress in the establishment of aids to navigation in Alaskan waters, and it estimates that $350,000 can be expended profitably during the next fiscal year in the establishment of eight more light-stations, which are held to be urgently necessary to the safety of Alaskan commerce and navigation.

Special attention is invited to the previous recommendation that authority be given for creating two additional light-house districts. The light-house service of the United States in the West Indian territory should constitute one light-house district and the Alaskan waters should constitute another. It has been found difficult, expensive, and exceedingly inconvenient to administer the affairs of the Porto Rican light-house service from the headquarters of the third light-house district, which are located at Tompkinsville, N. Y., and it is equally difficult, expensive, and inconvenient to admin-

ister the affairs of the Alaskan light-house service from Portland, Oreg., the headquarters of the thirteenth light-house district.

The Board's recommendation as to the need for additional light-house tenders, and especially the one for Porto Rican waters, is commended to the attention of Congress.

LIFE-SAVING SERVICE.

The number of disasters to documented vessels within the scope of the Service was 385. On board these vessels were 3,424 persons, of whom 19 were lost. The estimated value of the vessels was $9,253,630, and that of their cargoes $5,139,380, making the total value of property involved $14,393,010. Of this amount, $12,125,220 was saved and $2,267,790 lost. The number of vessels totally lost was 51. In addition to the foregoing, there were 361 casualties to undocumented craft—sailboats, rowboats, etc.—carrying 796 persons, 6 of whom perished. The value of property involved in these instances is estimated at $174,120, of which $167,575 was saved and $6,545 lost. The aggregate of disasters to vessels of all descriptions, with their value, including that of their cargoes, and also the number of persons involved, is, therefore, as follows:

Total number of disasters	746
Number of vessels totally lost	51
Total number of persons involved	4,220
Total number of persons lost	25
Total number of shipwrecked persons succored at stations	712
Total number of days' succor afforded	1,272
Total value of property involved	$14,567,130
Total value of property saved	$12,292,795
Total value of property lost	$2,274,335

The foregoing summary does not include 70 persons who were rescued from various positions of danger, most or all of whom would otherwise have perished, nor the 7 members lost from the Monomoy life-saving crew.

Much assistance was rendered in saving imperiled vessels and cargoes, 615 vessels having been worked afloat when stranded, repaired when damaged, extricated from dangerous positions, and similarly aided by the station crews. Besides the foregoing, assistance of minor importance was rendered to 480 vessels. Altogether, therefore, 1,095 vessels of all kinds, including small craft, were aided by the Service. This number does not include 237 instances in which vessels running into danger—210 of which were by night—were warned off by station patrolmen, numerous disasters undoubtedly being thereby averted.

The most notable event of the year was the loss of the keeper and 6 of the Monomoy life-saving crew on March 17 while engaged in an attempt to rescue 5 men from the coal barge *Wadena* stranded on the coast of Cape Cod. These surfmen perished on an errand to

which they were summoned by the men on the barge, who were safely taken into the surfboat, but became panic-stricken and so interfered with the use of the oars by the crew that the boat was capsized and lost. Twelve lives were thus sacrificed. Great sorrow and sympathy were aroused throughout the whole country, and a popular subscription of over $45,000 was raised, mostly in Massachusetts, for the support of the widows and care and education of the orphan children. Widespread interest also developed among the marine organizations of the principal commercial cities, who gave expression to the general feeling by numerous petitions for the passage by Congress of a pension act to cover similar cases. A bill was introduced in the House of Representatives and favorably reported from the Committee on Interstate and Foreign Commerce. The Department recommends its enactment.

The number of stations embraced in the Service at the end of the fiscal year was 272, of which 195 are located on the Atlantic and Gulf coasts, 60 on the coasts of the Great Lakes, 1 at the Falls of the Ohio River (Louisville, Ky.), and 16 on the Pacific coast. The net expenditure for the maintenance of the Service during the year was $1,654,392.96.

New stations at South Manitou Island and Sleeping Bear Point, Mich., were completed during the year. A new station at Arena Cove, Cal., is approaching completion, and plans and specifications are in course of preparation for a new station to be established on Fishers Island, N. Y. New stations at Amagansett, L. I., and Harvey Cedars, N. J., have been completed. Old stations at Long Beach and Squan Beach, N. J., Seatack (Virginia Beach), Va., and Whales Head (Currituck Beach), N. C., are being replaced by new ones. A new floating station at Louisville, Ky., at the falls of the Ohio River, and a new station at Ship Canal (Portage), Mich., are nearly completed, as is a wharf upon which to construct a new station at Chicago, Ill.

The act making appropriations for the sundry civil expenses of the Government for the fiscal year ended June 30, 1902, provided for the placing of a Lyle gun, the beach apparatus used with it, and suitable surfboats, at Cape Nome, Alaska. A suitable equipment was also authorized to be located at Port Day, N. Y., for the protection of life from drowning in the rapids of Niagara River. These provisions have been complied with.

SECRET SERVICE.

The Secret Service Division reports 573 arrests during the year, the capture of $65,000 in counterfeit notes and coins, and a large quantity of dies, molds, and contraband material. The activity of the agents was such as to discourage the issuance of new counterfeit

notes, only one dangerous bill having made its appearance during the year. The division performed much work for the other Departments in such a manner as to meet with commendation.

The chief of the division renews the hope that the habitual criminal act now under consideration by the Congress will receive favorable action during the coming session, and the Department is in full sympathy with him in the matter.

There is a large field for effective work among the disaffected classes—that is to say, those who advocate the use of force in the destruction of governments, and who preach assassination and anarchy. No provision exists for the investigation of the secret organizations which are maintained in all centers of industrial activity and whose existence is a constant menace to the lives of the highest officers of this and other governments. The Secret Service Division is well organized for the prosecution of the necessary investigations, but lacks the means and authority to carry them out. The matter is commended to the attention of Congress.

STATE BONDS AND STOCKS OWNED BY THE UNITED STATES.

The following statement shows the nonpaying State bonds and stocks, formerly in the Indian trust fund, now in the Treasury, belonging to the United States:

Louisiana	$37,000.00
North Carolina	58,000.00
South Carolina	125,000.00
Tennessee	335,666.66⅔
Virginia	594,800.00
Total	1,150,466.66⅔

The above is a statement of the principal of such stocks and bonds, and does not include interest.

The indebtedness of the State of Tennessee is subject to such action as may be taken under the joint resolution, approved May 12, 1898 (30 Stat. L., pp. 742, 743), which provides for the adjustment of the claims between the United States and the State, with directions that any settlement or compromise effected by virtue of the act shall be reported to the Congress for its action and approval.

By section 4 of the act of March 3, 1899 (30 Stat. L., 1358), the Secretary of the Treasury was authorized and directed to institute proceedings against the States indebted to the United States on account of bonds or stocks. Acting under this authority, demands were made upon the States for payment of amounts due from them, respectively; and no satisfactory response thereto having been made, the claims were transmitted to the Attorney-General for the institution of suits in the Supreme Court of the United States.

Suits were filed by the Attorney-General, but were subsequently discontinued and dismissed under the directions given in the sundry civil act of June 6, 1900 (31 Stat. L., 612).

During the present calendar year $132,000 of Florida State bonds, heretofore included in this statement, have been canceled and returned to the State, settlement of the mutual account between the United States and the State having been made in accordance with the provisions of the act of May 27, 1902 (32 Stat. L., p. 235).

The act of May 27, 1902 (32 Stat. L., p. 235), directs settlement of all claims of the States of Virginia and South Carolina for advances and expenditures made in the war of 1812 to 1815 with Great Britain, and provides that in the settlement any bonds or other evidences of debt of said States held by the United States on any account shall be credited as offsets. Final settlement of these claims has not yet been made.

A history of these State stocks and bonds is given in House document No. 263, Fifty-fourth Congress, second session.

CENTRAL PACIFIC DEBT.

All amounts which have become due to the United States under the agreement dated February 1, 1899, for the settlement of the indebtedness of the Central Pacific Railroad Company, have been paid by the railroad company in full, including interest on all outstanding notes to August 1, 1902.

The principal of all notes held August 1, 1902, amounted to $38,228,265.14, and first-mortgage bonds to the amount of $38,229,000 were held as security for the payment thereof.

HAWAIIAN DEBT.

Pursuant to the appropriation made by the act of March 3, 1901 (31 Stat. L., 1152), to carry into effect the agreement embodied in the joint resolution "To provide for annexing the Hawaiian Islands to the United States," approved July 7, 1898, under which not exceeding $1,000,000 of the debt of Hawaii, including postal savings deposits, was assumed by the United States, interest-bearing bonds and postal certificates have been redeemed by this Department, as follows:

Bonds, etc.	Amount—		Balance unpaid.
	Assumed by United States.	Paid by United States.	
Bonds	$3,235,400.00	$3,223,813.00	$11,587.00
Postal savings deposits	764,570.31	759,437.20	5,133.11
Total	3,999,970.31	3,983,250.20	16,720.11

ESTIMATED REVENUES AND EXPENDITURES.

The revenues of the Government for the current fiscal year are estimated at approximately $694,000,000. Expenditures during the the same period are estimated at $651,000,000, leaving an estimated surplus for the fiscal year of $43,000,000.

The revenues for the fiscal year ending June 30, 1904, are estimated at approximately $730,000,000. Expenditures, exclusive of isthmian-canal rights and other extraordinary appropriations for the same period, are estimated at $680,000,000, leaving the estimated surplus for the year $50,000,000.

These figures assume that existing business activities will continue. Public revenues, like private earnings, are dependent very largely upon industrial and commercial conditions. The largest deficit of the last decade (except pending the Spanish war) was $70,000,000. The Government Actuary estimates that were the present population to produce, consume, and import relatively the same class of goods and per capita the same amount that they did during the most unfavorable fiscal year in the recent past, there would be a deficit under present revenue laws of $90,000,000 per annum, instead of $50,000,000 surplus.

THE CURRENCY.

Any coin that the Government gratuitously and in unlimited quantity coins for the bullion owner will be worth exactly the same as the material of which it is coined.

By act of Congress approved February 12, 1873, and by a second act approved March 14, 1900, the value of the United States dollar was declared to be that of 25.8 grains of gold .900 fine. These acts have been referred to as establishing and determining the gold standard in the United States.

In 1792 the Congress authorized the purchase of bullion and the coinage of cents on Government account. Subsequently these cents were made legal tender in limited amount, but it was deemed unsafe as well as unjust to enforce the acceptance even of cents at more than their metallic value, and they were therefore made redeemable in lawful money. Similar provision, and for the same reason, has been made with respect to all minor coins.

In 1853 the Congress authorized the coinage on Government account of subsidiary silver coins of relatively less bullion value than the then standard coin, and made the same legal tender in limited amount, but it was subsequently deemed unsafe, as well as unjust, to enforce the acceptance thereof without special provision for their redemption.

In 1862 the Congress authorized the issuance of what was known as United States notes, popularly called "greenbacks," and made

the same, as between individuals, legal tender in unlimited amount. But because there was no provision for their redemption in coin, their purchasing power fluctuated very materially, notwithstanding the fact that their debt-paying power remained the equivalent of gold. Subsequently, the Congress, recognizing the ruinous effect upon commerce of an irredeemable currency, made special provision for the redemption of these notes in coin.

In 1893 a very serious financial panic arose, which threatened every commercial and industrial institution in the land. Without going unduly into the history of this panic, it is quite universally recognized that the possibility of Government notes being redeemed in coin worth less than 25.8 grains of gold was the prime factor which led to the hoarding of gold. There was no occasion to fear that greenbacks and Treasury notes would not be redeemed in coin, for this had been expressly provided, but there was occasion to fear that they might be redeemed in unprotected silver worth 54 cents in gold.

Subsequently, on March 14, 1900, the Congress, recognizing that the parity of the demand obligations of the Government could not long be maintained when redeemable in anything other than standard coin, expressly provided for the redemption of greenbacks and Treasury notes in gold. No provision has yet been made for the redemption of silver or its exchange for gold. There are now outstanding, in round figures, 550,000,000 coined silver dollars, of material worth not 54 cents each, as in 1893, but less than 40 cents each; and there is no express provision of law to protect the holder should public revenue again fall below current expenses and gold cease to flow into the Treasury.

It is true that by acts of Congress silver is receivable for customs dues and other debts, but the same law existed in 1893; and it reserves to the Government the right to pay in silver and compels its creditors to accept the same at par. It is doubtful if the solvency of a business man could be established by his agreeing to accept his own obligations on debts due to himself, while refusing to redeem the same in any money his creditors might designate. He might escape litigation so long as he remained a great creditor and a small debtor, but not afterward, and at no time would his business standing fail to suffer.

National-bank notes are secured by a special deposit of Government bonds, the principal and interest of most of which are payable in gold, but the notes themselves are payable in "lawful money," which includes irredeemable silver dollars, more than 60 per cent fiat.

In 1893 there were outstanding, roundly, $346,000,000 in United States notes and $147,000,000 in Treasury notes, all redeemable in coin, and the cheapest coin in which these notes could have been redeemed was worth 54 cents in gold. There were also $180,000,000 national-

bank notes, payable in "lawful money," and therefore liable to be discharged in silver worth 54 cents. There were also outstanding 420,000,000 silver dollars worth the same. There was therefore, approximately, in the aggregate, $500,000,000 of unprotected fiat in these three forms of money. Since that time United States notes and Treasury notes have been made redeemable by law in gold, but the present national-bank issue of $380,000,000 is payable in lawful money, which includes silver, worth not 54 cents but 39 cents, and there are now outstanding 550,000,000 silver dollars worth 39 cents each in gold. The aggregate unprotected fiat at this time is therefore $565,000,000, or $65,000,000 more than in 1893.

Throughout this discussion, gold certificates are treated as gold coin and silver certificates as silver coin.

Not only current obligations of the Government, but all contracts between citizens, and all bills of exchange, domestic and foreign, payable in United States money, are dischargeable at the option of the payor (except when otherwise expressly provided) in money coined on Government account and at fully 35 per cent profit to the Government, the bullion in which is worth less than 40 cents on the dollar.

The peril involved in this condition may be averted for a time, and possibly for all time. The evils that precipitated the disaster of 1893 escaped popular, though not universal, recognition so long as public revenues exceeded expenditures. The reason assigned why the exchangeability of gold and silver should not be established is that it would entail so large an obligation that the national credit would be endangered. This concedes the argument, but pleads the preference that the Government which has coined this silver and profited thereby shall be protected regardless of possible danger to the citizens and the peril to business.

The statute now provides that parity between all forms of money shall be maintained. A former Secretary of the Treasury expressed the opinion that a somewhat similar statute authorized the redemption of silver in gold. If that be the intention, I submit it would be better to express the same in specific terms. It has been found necessary, in order to maintain the parity of greenbacks and Treasury notes, to expressly provide for the redemption thereof in gold. I am not unmindful of the claim that parity will naturally continue so long as the Government accepts silver in payment of revenues. If this be true, there would be no danger to the Government should the two coins be made interchangeable.

I believe the Treasury of the United States would be in less danger with an express provision for the exchangeability of gold and silver than under existing laws. At the present time the Treasury furnishes all the gold needed, whatever the purpose for which it is

demanded, and certainly no more would be required for commerce, and not as much for hoarding, should all doubt as to the status of silver be removed. On the contrary, if all forms of money were made the equivalent of gold, then all occasion for hoarding one coin more than another would vanish, and the danger to the Treasury would be diminished instead of being increased. The ability of this Government to fulfill its promises has never been questioned, but doubts arising from unexpressed policies have caused more than one crisis. The pursuance of the present policy of confining the issuance of currency of denominations of $5 and under very largely to silver certificates would preclude the possibility of the collection of a sufficient volume of silver or silver certificates to embarrass the Government.

Should it be deemed wise to provide for the exchangeability of gold and silver, then national-bank notes might be made payable in gold. In this way there would be shifted to the banks the greater burden of furnishing gold for domestic use and for export, and this, in the event of an unfavorable balance of trade, might prove of great advantage to the Government. It would be manifestly unjust, as well as illogical, to require banks to redeem their notes in gold so long as legal-tender silver remains irredeemable and unexchangeable.

There can be no valid reason, legal, economic, or equitable, why the Government should not redeem in gold all its own obligations, whether they be represented in paper 100 per cent fiat, or in silver 60 per cent fiat. When the Government expressly guarantees its own issue, no objection can appropriately be urged against requiring banks to pay their notes in gold. On the contrary, I see many advantages to be gained, especially with respect to our foreign commerce, by making every obligation between the Government and the people, and between individuals, payable in money every dollar of which shall be the equivalent of 25.8 grains of standard gold, and on which a demand for this equivalent can be directly or indirectly predicated.

SUBSIDIARY COINAGE.

The aggregate of subsidiary coinage permissible under existing laws is one hundred million dollars. This limit has been reached, but the demand for subsidiary coins is by no means satisfied, and the Department even now is unable to fill all orders therefor. There is now in the vaults of the Treasury sufficient bullion to coin, in round numbers, 35,500,000 silver dollars, or $38,000,000 in subsidiary coins. The vaults of the Treasury are crowded with silver dollars, the amount of which will perhaps be better appreciated by stating that the space occupied in this way is the equivalent of a building 8

feet wide, 10 feet high, and 1,450 feet long. This volume is being increased at the rate of a million and a half per month. Our increasing commerce and population will at present absorb about ten million dollars in subsidiary coins per annum. It is not likely that this will continue indefinitely, but I see no reason why, to the limit of this demand, it may not safely be supplied by converting the present volume of bullion into subsidiary coin, and thereafter by recoining silver dollars.

BANKING.

Recent events not only justify but enforce the conclusion that our banking system is imperfect. During certain months of the year interest rates dropped dangerously low—dangerous in the sense that speculation was invited thereby. When the time arrived for moving crops, rates advanced alarmingly high. Meantime the price of Government bonds rendered the maintenance of national-bank circulation unprofitable, and this class of currency was retired with great rapidity.

The Department exerted every influence within its authority to counteract this natural contraction. During the early spring the surplus revenues were deposited with national banks upon satisfactory security, but preference was given to such institutions as maintained their limit of circulation. Then, during the months when rates of interest were low, no deposits were made. Later in the season, when it became apparent that some measure of financial stringency was certain to arise, the Department suggested to various depositary banks the wisdom of making preparation for the issuance of additional circulation. This suggestion was submitted to 18 of the larger institutions located in central reserve cities, to which 15 responded with orders for printing $12,000,000 circulation, and in the actual issuance of something over $7,000,000. Later, additional deposits were made, but they were made mostly with such banks as agreed to increase their circulation by an amount equal to and frequently double the deposit. In this way $4,000,000 more circulation was secured. Still later an offer was made to accept, as security for deposits already made, the substitution of State and certain municipal bonds at 75 per cent of their face value, in lieu of Government bonds then on deposit, on condition that the Government bonds thereby released should be made the basis of immediate circulation. In this way about $15,000,000 circulation was induced. Thus, by means of these several methods, the Department secured, in round figures, $26,000,000 increase of circulation from the national banks holding Government deposits.

During the twelve months from November 20, 1901, to November 20, 1902, 467 new banks were chartered, with a capital of over

$30,000,000 and an initial circulation aggregating, in round numbers, $7,500,000, while the capital of existing national banks was increased more than $43,000,000. The increase in circulation, however, during the twelve months was only about $20,500,000. Thus it is manifest that but for the extraordinary inducements offered by the Department national-bank circulation would have contracted during the year, notwithstanding the organization of new banks and the aggregate increase in national-bank capital of about $75,000,000. In fact, national-bank circulation did decrease very nearly $6,000,000 during the fiscal year ending June 30. The efforts of the Department to increase circulation were not resorted to until after that date. Fully $50,000,000 increase could have been secured had the law permitted its rapid retirement when no longer needed.

The reason for this tendency toward contraction is apparent. Government bonds are scarce, and those outstanding are held in large part by trust estates, savings banks, and insurance companies, and are not available for circulation. The bonds that are on the market are held at prices which render their use as security for circulation unprofitable whenever the rate of interest approximates 6 per cent.

The frequent purchase and retirement of bonds renders the amount available for circulation gradually less, while a rapidly growing population, additional banking facilities, and expanding trade suggest the need of an ever-increasing circulation. I therefore believe the time has arrived when it will be necessary to adopt one of two policies: either the Government debt must be perpetuated as a basis for national-bank circulation, and additional bonds issued as occasion may require, or some other system must be provided.

By the act of Congress approved March 14, 1900, the Department is authorized to refund all bonded indebtedness maturing prior to 1925. This discretion would have been exercised as far as possible but for the fact that if present conditions continue the Government will be in funds sufficient to discharge this indebtedness at the time it matures. The question has, therefore, presented itself for solution: Shall the Department, as the agent of the Government, secure additional time upon an indebtedness not yet due, when there is fair prospect that it can be met according to its terms?

There is one other reason why the refunding of this indebtedness is deemed of doubtful expediency. Whenever there is a surplus of public funds in the Treasury, and financial conditions make it advisable that it be released, it becomes necessary to purchase Government bonds. At present there is no other way to put accumulated surplus revenues promptly in circulation. The available bonds are not held by banks or by business concerns. So, whenever the

Government is a purchaser, the price is promptly advanced. This is not mentioned for the purpose of criticising those who may hold bonds as an investment or for speculation, but simply to state an important factor in the equation. Should the bonds falling due in the near future be permitted to mature, they can be extended at a very low rate of interest payable on demand, and the holders thereof can no longer dictate prices to the Government. Had the Department, however, exercised the discretion with which it is clothed by the act referred to, and offered to refund, it is probable that a portion of the outstanding indebtedness of the Government would have been presented and a slight increase in circulation might have followed. In view of these considerations, it has been thought best to defer action, that the current session of the Congress may, if it shall deem wise, determine by additional legislation the future policy of the Government.

Additional circulation will be necessary. Outstanding Government bonds are inadequate to secure it even if their market value would justify their use by the banks. It is even doubtful if national-bank currency based on Government bonds can be made advantageous to banks. A lower tax on circulation would be counteracted very promptly by a corresponding advance in the price of bonds, and the profit would accrue to the present bondholder.

I see no objection to the issuance of circulation based upon general credits, if properly safeguarded. Neither do I believe it necessary to make currency thus issued a first lien upon assets. A very small tax upon circulation would be sufficient to cover any possible loss. The Government Actuary has demonstrated that a tax of one-eighth of 1 per cent upon circulation would have covered all loss from the beginning of our national banking system to the present time, had each bank maintained its limit of circulation. Instead of calling this a tax, suppose it be called "premium on insurance" and the Government the "underwriter." The banks could be required to redeem their circulation at reserve cities, and the Government would never suffer injury or embarrassment as an insurer against ultimate loss. The lowest tax suggested by anyone would far exceed any possible loss, and the Government could assume responsibility to the people and still realize a profit. When thus guaranteed and primarily redeemed by the Government at the expense of the bank of issue, currency based on general assets would be as acceptable and as secure as the present national-bank notes based on specific assets.

I doubt, however, the wisdom of making provision for the issuance of credit currency to the limit of the bank's capital. Not that I would fear unfortunate results, but in all financial legislation the greatest caution must be exercised lest the currency be suddenly and unduly

inflated. An elastic currency is well-nigh imperative, but a sudden, unnecessary, and permanent increase would be most unfortunate.

Authority to issue circulation based on credits would not preclude the continuance of the present national-bank currency. Neither is it necessary that it be designated "credit currency." If all forms of money were made interchangeable, what some are pleased to call "asset currency," others "credit currency," and still others "emergency currency," might be denominated "gold reserve currency," for certainly a reserve against this class of currency should be maintained by the bank, and this reserve would be very properly gold, should the Government make all its money interchangeable.

Other considerations will naturally suggest themselves, and need not be outlined in this report.

I am not prepared at this time to recommend branch banks. Recent events confirm a previous opinion that the peculiar conditions of this country would not be conserved by such a policy. Greater economy in management may be conceded. It may be conceded also that the system works well in some countries, but no other country has such diversified and widely separated interests as this. In order that the parent bank shall be able to serve widely separated communities, it must first understand the needs of these communities, and neither experience nor observation justifies the conclusion that such intimacy is likely to exist. I think a far better course, for the present at least, would be to provide an elastic currency, available in every banking community and sufficient for the needs of that locality. This, I think, can be accomplished either in the way I have intimated or by several other methods.

The Department recommends no one plan to the exclusion of all others. It is the province of the Department to point out the weak places that the Congress may strengthen them; to suggest possible, if not imminent, dangers, that the Congress may provide against them; but ultimate responsibility does not lie with the Department.

PUBLIC DEPOSITS.

At present the purchase of outstanding Government bonds for the credit of the sinking fund affords the only method of returning surplus public revenues to the channels of trade after they have been once covered into the Treasury. The Department is authorized to deposit current internal-revenue and other receipts, except customs, with national banks upon satisfactory security, but this method affords very tardy relief in case of monetary stringency. On the other hand, the purchase of bonds invites a contraction of national-bank circulation for the purpose of disposing of the bonds pledged for its security at the advanced price which usually prevails when-

ever the Government becomes a purchaser. Thus the object sought to be attained is counteracted. If authority were granted to make deposits without security after special examination and at such rates of interest as the Secretary of the Treasury might determine, quite an element of elasticity would be provided whenever a surplus of revenues existed. By advancing or lowering the rate of interest an equilibrium could be maintained throughout the country, and the interest charge would more than cover any loss.

But if it should be deemed unwise to permit the loaning of public funds without specific security, it certainly would be well to authorize deposits direct from the Treasury, and, as now, upon satisfactory security. If such authority had existed during the last few months, the something more than $20,000,000 which was paid to the owners of Government bonds would have been deposited in a large number of reserve cities throughout the country, and the relief afforded would have been equally permanent and more widely appreciated.

OTHER RECOMMENDATIONS.

I desire to call special attention to the following recommendations, reasons for which are more fully set forth in the preceding pages:

The mint at New Orleans is now being operated at great inconvenience and expense, and it is recommended that it be reduced to an assay office after June 30, 1903.

The building now occupied by the Bureau of Engraving and Printing is overcrowded, and additional room is imperative.

It is recommended that the rate of taxation on such national-bank circulation as may be secured hereafter by bonds issued for the construction of the isthmian canal be reduced to one-half of 1 per cent. This will place the proposed issue on a par with consols, and will insure, I think, their negotiation at somewhat above par.

Several customs districts can safely be abolished and others consolidated.

An annual appropriation for the sinking fund to meet the debt of the District of Columbia is recommended; and it is suggested that authority be granted to purchase outstanding Government bonds with the proceeds of such sinking fund whenever it is impracticable to purchase advantageously the bonds of the District.

The several branches and bureaus of the Treasury Department are widely separated, and much valuable time is wasted in carrying documents from one division to another, and in securing necessary information, which could be avoided with great saving to the Government by the installation of a comprehensive pneumatic tube system, and the same is therefore recommended.

The attention of the Congress is called again to the necessity for a

Hall of Records. The Treasury Department is now seriously congested. Many of the corridors are filled with boxes and cumbersome file cases.

The Treasury building is poorly ventilated. Especially during the winter months the air in some portions of the building is very unwholesome and much illness among employees results. A modern heating and ventilating system is therefore earnestly recommended.

Some suitable penalty for the willful violation of the law relative to the importation of diseased aliens is suggested.

The Department finds the so-called "Chinese-exclusion laws" very difficult to enforce, and therefore recommends additional appropriations and the adoption of the Bertillon system for the identification of this class of aliens.

The Revenue-Cutter Service asks an appropriation for the construction of at least five new revenue cutters to replace those that have become old and practically worthless.

It is believed that the introduction of the decimal or metric system of weights and measures in the Departments of the Government will be not only an advantage to the Departments themselves, but will do much toward bringing about the general adoption of the system by the public.

It is recommended that the additional taxes necessarily imposed on Cuban vessels for a short time after the establishment of the Republic of Cuba be refunded.

Special attention is called to the importance of providing liberally for the erection of light-houses and light-ships, and bringing those now in existence to a higher standard.

A pension for families of the life-saving crew who perished at Monomoy, March 17, 1902, is recommended.

The imperative need of increased appropriations for secret-service work is also called to your attention.

LESLIE M. SHAW,
Secretary.

To the SPEAKER OF THE HOUSE OF REPRESENTATIVES.

PAPERS

ACCOMPANYING

REPORT OF THE SECRETARY OF THE TREASURY.

REPORT OF THE TREASURER.

TREASURY DEPARTMENT,
OFFICE OF THE TREASURER,
Washington, D. C., November 10, 1902.

SIR: The magnitude of the available cash balance and the unprecedented holdings of gross gold are the striking features of the condition of the Treasury at the close of the fiscal year 1902.

The transactions for the twelve months then ended are marked, first, by the diminution of the revenues due to the repeal of war taxes by the act of March 2, 1901, and the reduction of expenditures from the progress of peace in our new possessions, and second, by the large increase in gold certificates outstanding and the continued change of other kinds of Government paper currency into denominations of $10 and under.

In the first quarter of the fiscal year 1903 the diminution of internal revenue continued in larger ratio from the effects of the act of April 12, 1902, repealing war taxes, while the customs increased still more, and the expenditures advanced considerably as compared with the July, August, and September preceding.

REVENUES AND EXPENDITURES FOR 1901 AND 1902.

The comparison of net ordinary revenues and expenditures for two years is stated by sources of receipts and classes of payments:

Account.	1901.	1902.	Increase.	Decrease.
REVENUES.				
Customs	$238,585,455.99	$254,444,708.19	$15,859,252.20	
Internal revenue	307,180,663.77	271,880,122.10		35,300,541.67
Lands	2,965,119.65	4,144,122.78	1,179,003.13	
Miscellaneous	38,954,098.12	32,009,280.14		6,944,817.98
Total	587,685,337.53	562,478,233.21	17,038,255.33	42,245,359.65
Net				25,207,104.32
EXPENDITURES.				
Customs	29,516,890.79	28,012,620.16		1,504,270.63
Internal revenue	5,990,282.72	8,536,348.58	2,546,065.86	
Interior civil	18,739,784.09	13,328,329.16		5,411,454.93
Treasury proper	58,787,190.75	54,808,006.95		3,979,183.80
Diplomatic	3,317,900.35	2,765,734.01		552,166.34
Judiciary	5,929,954.40	6,018,285.05	88,330.65	
War Department	144,615,697.20	112,272,216.08		32,343,481.12
Navy Department	60,506,978.47	67,803,128.24	7,296,149.77	
Indians	10,896,073.35	10,049,584.86		846,488.49
Pensions	139,323,621.99	138,488,559.73		835,062.26
Interest	32,342,979.04	29,108,044.82		3,234,934.22
Total	509,967,358.15	471,190,857.64	9,930,546.28	48,707,041.79
Net				38,776,495.51
Surplus	77,717,984.38	91,287,375.57		

The record shows net reductions in 1902, as compared with the preceding twelve months, of $25,207,104.32 in the revenues, which are more than offset by net reductions of $38,776,495.51 in the expenditures. The result is an increase in the surplus in 1902 over 1901 of $13,569,391.19. The chief falling off is in internal revenue of $35,300,541.67, due to legislation, while the miscellaneous receipts are $6,944,817.98 smaller. Customs, on the other hand, are $15,859,252.20 greater.

The expenditures show a falling off in every class except internal revenue, judiciary, and the Navy; in the last an increase of $7,296,149.77 appears. The chief reduction is for the War Department, which cost $32,343,481.12 less than in the preceding year. The next in magnitude of reduction is interior civil, of $5,411,454.93. For the Treasury the expenditures show $3,979,183.80 decrease. For customs, $1,504,270.63 less was spent. Disbursements for diplomatic purposes fell off $552,166.34; for Indians, $846,488.49, and for pensions, $835,062.26. In the outlay for interest there is the large reduction of $3,234,934.22.

TRANSACTIONS IN THE PUBLIC DEBT.

The Government bonds were much less active in the past fiscal year than in the one before. The receipts fell to $2,370, a reduction of $138,816,730, while in disbursements for this purpose the reduction was $118,704,790. The total receipts on account of the public debt show a decrease of $59,158,164, while in disbursements there was a decrease of $68,053,333.78. The excess of receipts over the preceding year was $8,895,169.78. The items follow:

Account.	1901.	1902.	Increase.	Decrease.
RECEIPTS.				
United States bonds	$138,819,100.00	$2,370.00		$138,816,730.00
United States notes	91,680,000.00	101,520,000.00	$9,840,000.00	
National-bank notes	12,882,868.50	32,735,434.50	19,852,566.00	
Gold certificates	114,570,000.00	129,880,000.00	15,310,000.00	
Silver certificates	200,852,000.00	235,508,000.00	34,656,000.00	
Total	558,803,968.50	499,645,804.50	79,658,566.00	138,816,730.00
Net				59,158,164.00
DISBURSEMENTS.				
United States bonds	174,925,620.00	56,220,830.00		118,704,790.00
Fractional currency	2,578.78	3,088.00	509.22	
United States notes	91,680,000.00	101,520,000.00	9,840,000.00	
Treasury notes of 1890	28,244,000.00	17,783,000.00		10,461,000.00
National-bank notes	18,626,437.50	20,085,274.50	1,458,837.00	
Gold certificates	53,409,490.00	72,255,600.00	18,846,110.00	
Silver certificates	181,853,000.00	216,525,000.00	34,672,000.00	
Currency certificates	3,705,000.00			3,705,000.00
Total	552,446,126.28	484,392,792.50	64,817,456.22	132,870,790.00
Net				68,053,333.78
Excess of receipts	6,357,842.22	15,253,012.00	8,895,169.78	

ORDINARY AND DEBT TRANSACTIONS COMBINED.

By the combination of the footings of the two preceding tables the total receipts and disbursements are set forth:

Account.	1901.	1902.	Increase.	Decrease.
RECEIPTS.				
Ordinary	$587,685,337.53	$562,478,233.21		$25,207,104.32
Debt	558,803,968.50	499,645,804.50		59,158,164.00
Total	1,146,489,306.03	1,062,124,037.71		84,365,268.32
DISBURSEMENTS.				
Ordinary	509,967,358.15	471,190,857.64		38,776,495.51
Premium on debt	14,649,572.95	14,043,391.14		606,181.81
Debt	552,446,126.28	484,392,792.50		68,053,333.78
Total	1,077,063,052.38	969,627,041.28		107,436,011.10
Excess of receipts	69,426,253.65	92,496,996.43	$23,070,742.78	

Thus the total receipts of the Treasury for 1902 are less by $84,365,268.32 than for 1901, and the total disbursements are less by $107,436,011.10. The total transactions show an excess of receipts of $23,070,742.78.

FIRST QUARTER OF TWO YEARS.

In July, August, and September of two fiscal years the ordinary revenues and expenditures by warrants were as here stated:

Account.	1902.	1903.	Increase.	Decrease.
REVENUES.				
Customs	$62,799,739.70	$78,495,559.88	$15,695,820.18	
Internal revenue	73,121,830.61	59,826,852.99		$13,294,977.62
Public lands	912,359.24	2,117,833.07	1,205,473.83	
Miscellaneous	6,994,006.17	8,276,530.68	1,282,524.51	
Total	143,827,935.72	148,716,776.62	18,183,818.52	13,294,977.62
EXPENDITURES.				
Civil and miscellaneous	27,057,641.84	31,035,086.95	4,027,445.11	
War	31,818,602.50	35,676,811.24	3,858,208.74	
Navy	16,681,344.15	20,706,338.33	4,024,994.18	
Interior—Indians	2,770,608.68	3,597,451.48	826,842.80	
Interior—pensions	35,132,278.80	36,324,131.09	1,191,852.29	
Interest on the public debt	10,513,359.79	10,031,185.28		482,174.51
Total	123,973,835.76	137,421,004.37	13,929,343.12	482,174.51

Thus the customs receipts for the new quarter increased over the like period of 1902 by $15,695,820.18, while the internal revenue receipts, responding to the recent statute, were $13,294,977.62 less. In miscellaneous receipts there was an advance of $1,282,524.51, and in those for public lands of $1,205,473.83. The total receipts, if the two quarters are compared, show a net increase of $4,888,840.90. The expenditures also are larger in a more conspicuous degree, as the increase reaches $13,447,168.61. The interest on the public debt is less by $482,174.51, but an advance appears in every other item — $4,027,445.11 for civil and miscellaneous; $3,858,208.74 for war;

$4,024,994.18 for the Navy; $826,842.80 for Indians; and $1,191,852.29 for pensions. Thus for the quarter the receipts exceed the expenditures by $11,295,772.25. In the first quarter of 1902 this excess was $19,854,099.96. By October 31, this fiscal year, the receipts became $13,539,171.53 more than the expenditures.

THE RESERVE AND TRUST FUNDS.

While United States notes and treasury notes are redeemed in gold to considerable amounts, as stated elsewhere, the redemptions are each day exchanged for gold, so that the reserve fund of $150,000,000 is always kept intact. This movement in United States notes was $6,293,843 less in 1902 than during the preceding year, and in treasury notes was $827,912 greater.

For the first quarter of the new fiscal year the like redemptions and exchanges were, in United States notes, $976,660, and in treasury notes $254,800. In the corresponding quarter of the preceding year they were, in United States notes, $3,735,800, and in treasury notes $306,393.

On June 30, the end of the fiscal year, from the revised figures, the respective funds stood as here stated:

RESERVE FUND.

Gold coin and bullion in division of redemption	$150,000,000

TRUST FUNDS.

[Held for the redemption of the notes and certificates for which they are respectively pledged.]

DIVISION OF REDEMPTION.		DIVISION OF ISSUE.	
Gold coin	$346,612,089	Gold certificates outstanding	$346,612,089
Silver dollars	453,997,000	Silver certificates outstanding	453,997,000
Silver dollars of 1890	39,961	Treasury notes outstanding	30,000,000
Silver bullion of 1890	29,960,039		
Total	830,609,089	Total	830,609,089

On October 1, 1902, the reserve and trust funds were:

RESERVE FUND.

Gold coin and bullion in division of redemption	$150,000,000

TRUST FUNDS.

[Held for the redemption of the notes and certificates for which they are respectively pledged.]

DIVISION OF REDEMPTION.		DIVISION OF ISSUE.	
Gold coin	$363,311,089	Gold certificates outstanding	$363,311,089
Silver dollars	465,752,000	Silver certificates outstanding	465,752,000
Silver dollars of 1890	2,396,361	Treasury notes outstanding	26,836,000
Silver bullion of 1890	24,439,639		
Total	855,899,089	Total	855,899,089

The statement on November 1, 1902, was:

RESERVE FUND.

Gold coin and bullion in division of redemption	$150,000,000

TRUST FUNDS.

[Held for the redemption of the notes and certificates for which they are respectively pledged.]

DIVISION OF REDEMPTION.		DIVISION OF ISSUE.	
Gold coin	$367,078,569	Gold certificates outstanding	$367,078,569
Silver dollars	467,442,000	Silver certificates outstanding	467,442,000
Silver dollars of 1890	1,239,399	Treasury notes outstanding	25,796,000
Silver bullion of 1890	24,556,601		
Total	860,316,569	Total	860,316,569

REDEMPTION OF NOTES IN GOLD.

United States notes to the amount of $17,482,590 and treasury notes amounting to $1,274,590 were redeemed in gold during the past fiscal year. The transactions are natural exchanges apart from special desire for the yellow metal. With the people, the majority is strongly for small denominations of paper for current use, and only a small and nominal minority is for actual gold for any purpose, except for use in the arts, and never from distrust of other forms of money. For export gold certificates are paid for bars.

GENERAL FUND—CASH IN THE VAULTS.

The notable points in the general fund are the increase in many of the figures at the end compared with the beginning of the fiscal year. In gold, metal and certificates, the increment was $5,989,352.55. Standard dollars fell off $1,073,767. Silver certificates became $2,068,894 more, and silver bullion $1,294,441.11 greater by reason of the melting of uncurrent subsidiary silver, which was not recoined during the fiscal year. United States notes now passing into the denomination of $10 as redemptions occur are more largely in circulation, and leave $4,246,316 less in the Treasury. On the other hand, there is an increase in national-bank notes of $2,564,188.86. By the special industry of the mints an addition of $874,976.87 was made to the subsidiary silver coin, and of $383,249.55 to the minor coin. The old fractional currency is slowly disappearing.

By the action of the Secretary of the Treasury, the deposits in national banks to the credit of the Treasurer received additions of $23,779,937.97. At the same time the credits of disbursing officers in the banks grew by $192,635.67. Thus the banks held at the close of the year $123,983,067.59, against $100,010,493.95 at its outset.

No noteworthy changes took place in the outstanding liabilities, as the tables show.

The result was that the available cash balance at the end of 1902 was more by $33,780,563.93 than at the end of 1901, and reached the maximum of $212,187,361.16. This condition of the Treasury was foreseen and led to the repeal of the war taxes by the act of April 12, 1902.

By October 1, 1902, the available cash balance rose to $221,253,394.12, including an increase for the quarter in gold, metal, and certificates of $32,323,480.12. In silver certificates there was a falling off for the period of $1,258,816, and in standard dollars of $14,825,710. The reduction in United States notes was $8,638,364, and in subsidiary silver $3,380,162.52. National-bank notes increased $3,414,763.97. The deposits in national banks, including those of disbursing officers, grew $9,949,129.82 during the quarter.

The tables compare three periods:

GENERAL FUND—CASH IN THE VAULTS.

[From revised statements.]

Kind.	June 29, 1901.	June 30, 1902.	Oct. 1, 1902.
Gold coin and bullion	$55,830,608.42	$63,588,210.97	$77,195,736.09
Gold certificates	41,981,330.00	40,213,080.00	58,929,035.00
Standard silver dollars	18,464,618.00	17,390,851.00	2,565,141.00
Silver certificates	5,370,444.00	7,439,338.00	6,180,522.00
Silver bullion	1,838,154.98	3,132,596.09	3,310,198.92
United States notes	16,635,610.00	12,389,294.00	3,750,930.00
Treasury notes of 1890	258,462.00	197,224.00	94,210.00
National-bank notes	8,631,386.09	11,195,574.95	14,610,338.92
Subsidiary silver coin	10,587,556.93	11,462,533.80	8,082,371.28
Fractional currency	1,251.87	146.83	141.37
Minor coin	536,154.99	919,404.54	701,445.92
Total	160,135,577.28	167,928,254.18	175,420,070.50
In national-bank depositaries:			
To credit of the Treasurer of the United States	93,613,673.11	117,393,611.08	126,102,429.57
To credit of disbursing officers	6,396,820.84	6,589,456.51	7,829,767.84
Total	100,010,493.95	123,983,067.59	133,932,197.41
Awaiting reimbursement, bonds and interest paid	297,921.81	16,564.79	178,191.45
Total	100,308,415.76	123,999,632.38	134,110,388.86
Aggregate	260,443,993.04	291,927,886.56	309,530,459.36
Liabilities:			
National-bank 5 per cent fund	13,267,236.27	13,851,846.04	12,905,309.79
Outstanding checks and drafts	2,883,662.45	3,561,165.48	8,460,738.93
Disbursing officers' balances	48,097,801.28	44,899,648.10	57,993,244.37
Post-Office Department account	9,242,850.67	9,743,543.62	6,620,897.11
Miscellaneous items	8,545,644.24	7,684,322.16	2,296,875.04
Total	82,037,194.91	79,740,525.40	88,277,065.24
Available cash balance	178,406,798.13	212,187,361.16	221,253,394.12

By November 1 the available cash balance became $206,421,878.30, and the details on that date follow:

GENERAL FUND, NOVEMBER 1, 1902.

Gold coin and bullion	$89,220,558.49
Gold certificates	24,322,375.00
Standard silver dollars	568,664.00
Silver certificates	4,271,562.00
Silver bullion	2,615,202.88
United States notes	3,041,934.00
Treasury notes of 1890	47,722.00
National-bank notes	13,468,852.32
Subsidiary silver coin	6,909,608.31
Fractional currency	195.41
Minor coin	738,377.53
	145,205,051.94

In national-bank depositaries:		
To credit of the Treasurer of the United States	$139,487,590.17	
To credit of disbursing officers	7,397,422.32	
	146,885,012.49	
Awaiting reimbursement:		
Bonds and interest paid	289,119.87	
		$147,174,132.36
		292,379,184.30
Liabilities:		
National-bank 5 per cent fund	14,664,321.09	
Outstanding checks and drafts	9,027,091.49	
Disbursing officers' balances	56,203,466.94	
Post-Office Department account	3,821,455.66	
Miscellaneous items	2,240,970.82	
		85,957,306.00
Available cash balance		206,421,878.30

THE NET AVAILABLE CASH BALANCE.

The available cash balance in the Treasury July 1, 1902, was the largest in our history up to that date. It amounted, including the reserve fund, to $362,187,361.16. For five months in 1879 the figures on record are larger, but they include funds held against called bonds for the ninety days of notice required by law. The present balance is subject to no such deductions. The current outstanding obligations are not included. The gold reserve is counted in, as it is available for the redemption of legal-tender notes. The sums in national banks to the credit of the Treasurer and of disbursing officers appear to the amount of $123,983,067.59. The subsidiary silver, $11,462,533.80, and the minor coin, $919,404.54 could hardly be used for large payments, nor is the silver bullion to be reckoned for such purpose. The national-bank notes are to their extent a fair offset to the 5 per cent fund in the outstanding liabilities.

With such deductions there remained July 1 in the Treasury vaults a little over $79,000,000. As $50,000,000 is deemed a fair working fund, about $29,000,000 could be spared. But proper preparation for the reduction of taxes under the act of April 12, 1902, forbade expenditure for any other than current needs. The Treasury was kept in good condition to meet the further repeal of the war taxes, taking effect July 1, the effect of which was felt in the first months of the new fiscal year.

Nearly one-half of the net available cash balance July 1 was in gold, coin, and certificates, $103,801,290.97 over and above the gold reserve of $150,000,000, and by October 1 it became $136,124,771. This amount far exceeds the outstanding liabilities. As a measure of the financial strength of the Government the fact deserves mention.

During the first quarter of the new fiscal year the available cash balance grew by $11,295,772.25, owing to large custom receipts which offset the reduction in the war taxes. The grand aggregate thus surpasses all previous records. The excess above a working fund ran up to $35,000,000, and called for special efforts by the Secretary for its reduction. By November 1, by reason of the large payments for the relief of the money market, the amount above the working fund was brought to about $6,000,000.

Comparison with the years since 1890 will make clear the strides in this field:

AVAILABLE CASH BALANCE (INCLUDING THE RESERVE FUND), FROM THE REVISED STATEMENTS, ON THE DATES NAMED.

Date.	Available cash balance.		
	Reserve fund.	Balance.	Total.
July 1—			
1890	$100,000,000	$79,259,837.18	$179,259,837.18
1891	100,000,000	56,847,826.49	156,847,826.49
1892	100,000,000	29,182,494.70	129,182,494.70
1893	100,000,000	24,824,804.94	124,824,804.94
1894	100,000,000	18,885,988.16	118,885,988.16
1895	100,000,000	96,348,193.17	196,348,193.17
1896	100,000,000	169,637,307.07	269,637,307.07
1897	100,000,000	144,466,201.95	244,466,201.95
1898	100,000,000	109,282,643.13	209,282,643.13
1899	100,000,000	184,488,516.20	284,488,516.20
1900	150,000,000	156,827,605.37	306,827,605.37
1901	150,000,000	178,406,798.13	328,406,798.13
1902	150,000,000	212,187,361.16	362,187,361.16
Oct. 1, 1902	150,000,000	221,253,394.12	371,253,394.12

BONDS BOUGHT FOR THE SINKING FUND.

Out of the surplus of $91,287,375.57 bonds were purchased for the sinking fund to the amount of $56,071,230 in principal, for which premium and accrued interest were paid of $14,339,211.33, making a total of $70,410,441.33.

Of these purchases the transactions under notices of April 9, May 9, and September 10, 1901, were closed October 31, 1901, and amounted to these sums:

BONDS BOUGHT FROM JULY 1 TO OCTOBER 31, 1901.

Loan.	Coupon.	Registered.	Principal.	Interest.	Premium.
Funded loan of 1907	$895,300	$9,208,500	$10,103,800	$62,776.38	$1,285,075.57
Loan of 1904	509,850	318,800	828,650	5,619.07	66 284 58
Loan of 1925	4,991,700	8,766,000	13,757 700	81,205 71	5,436 556.23
Loan of 1908–1918	507,040	921,280	1,428,320	5,145.39	119,374.79
Total	6,903,890	19,214,580	26,118,470	154,746.55	6,907,291.17

Under announcement of October 31, 1901, which reserved the right to discontinue without previous notice, bonds were bought until March 20, 1902, by loans, to the amount here stated:

BONDS BOUGHT FROM OCTOBER 31, 1901, TO MARCH 20, 1902.

Loan.	Coupons.	Registered.	Principal.	Interest.	Premiums.
Funded loan of 1907	$1,175,750	$12,921,450	$14,097,200	$85,766.01	$1,673,545.38
Loan of 1904	843,750	771,350	1,615,100	7,486.78	109,395.67
Loan of 1925	1,597,800	11,965,700	13,563,500	47,064.04	5,298,653.07
Loan of 1908–1918	388,300	288,660	676,960	756.81	54,505.85
Total	4,005,600	25,947,160	29,952,760	141,073.64	7,136,099.97

PURCHASES OF BONDS STATED BY MONTHS.

These purchases were made in the several months of the fiscal year, according to the statement given below:

Month.	Funded loan of 1907.	Loan of 1904.	Loan of 1908–1918.	Loan of 1925.	Total principal.	Cost.
1901.						
July	$918,300	$350,100	$396,620		$1,665,020	$1,852,193.11
August	2,346,500	175,950	313,560		2,836,010	3,186,449.89
September	5,869,750	286,600	657,020	$8,860,600	15,673,970	20,112,270.57
October	969,250	16,000	61,120	1,897,160	2,943,530	3,620,594.15
November	4,072,450	805,400	574,620	6,508,350	11,960,820	15,142,333.95
December	3,138,400	159,900	54,320	2,430,750	5,783,370	7,164,571.88
1902.						
January	2,091,800	333,800	31,240	1,728,100	4,184,940	5,155,649.00
February	1,953,250	93,200	11,220	15,500	2,073,170	2,323,034.65
March	2,841,300	222,800	5,560	2,880,800	5,950,460	7,444,344.13
Total	24,201,000	2,443,750	2,105,280	27,321,200	56,071,230	70,410,441.33

PURCHASES OF THE LOAN OF 1904.

Under an offer made by the Secretary of the Treasury September 26 to buy bonds of the loan of 1904 at 105 if presented before October 15, 1902, purchases of such securities were made to the amount of $25,300.

PURCHASES OF THE LOAN OF 1925.

Arrangement was made by the Secretary of the Treasury for the purchase of bonds of the loan of 1925 on October 17 and 18, 1902, deliverable then or on October 20. The cash paid was:

Loan.	Principal.	Premium, including accrued interest.	Total.
Loan of 1925	$16,504,300	$6,342,229.99	$22,846,529.99

THE PUBLIC DEBT, 1901, 1902, AND FIRST QUARTER OF 1903.

The purchases of bonds explain the reductions in the loans of 1908–1918, of 1907, of 1925, and of 1904. Minor sums are taken from the matured loans, the old demand notes, and the fractional currency. By the withdrawal of securities pledged for circulation of national banks and payment for them in lawful money the cash deposits for those institutions were advanced by $12,667,660 during the fiscal year. The changes in treasury notes and silver certificates very nearly balance each other. The increase of $57,624,400 in gold certificates adds so much to the public debt, but every dollar is offset by actual coin in the Treasury. If allowance is made for that fact, the national obligations instead of showing an increase of $15,283,512 will be proved to be $42,340,888 less at the close of June, 1902, than at the same date in 1901.

The table illustrates the situation:

	Rate.	When payable.	June 29, 1901.	June 30, 1902.	Oct. 1, 1902.
Consols of 1930	2	After Apr. 1, 1930	$445,940,750.00	$445,940,750.00	$445,940,750.00
Loan of 1908–1918	3	After Aug. 1, 1908	99,621,420.00	97,515,660.00	97,515,660.00
Funded loan of 1907	4	July 1, 1907	257,376,050.00	233,177,400.00	233,177,500.00
Refunding certificates	4	Convertible	33,320.00	31,980.00	31,880.00
Loan of 1925	4	Feb. 1, 1925	162,315,400.00	134,994,200.00	134,994,200.00
Loan of 1904	5	Feb. 1, 1904	21,854,100.00	19,410,350.00	19,410,350.00
Matured loans		On demand	1,415,620.26	1,280,860.26	1,256,860.26
Old demand notes		do	53,847.50	53,847.50	53,847.50
United States notes		do	346,681,016.00	346,681,016.00	346,681,016.00
National-bank notes		do	29,404,309.50	42,071,969.50	42,733,894.50
Fractional currency		do	6,876,411.63	6,873,323.63	6,873,323.63
Gold certificates		do	288,957,689.00	346,582,089.00	363,311,089.00
Silver certificates		do	435,014,000.00	453,997,000.00	465,752,000.00
Treasury notes of 1890		do	47,783,000.00	30,000,000.00	26,836,000.00
Total			2,143,826,923.89	2,158,610,445.89	2,184,568,370.89

For July, August, and September of the new fiscal year the gold certificates took on an increment of $16,729,000, and silver certificates of $11,755,000, while a reduction of $3,164,000 occurred in Treasury notes.

ANTICIPATION OF INTEREST.

Twice during the fiscal year the Secretary of the Treasury gave notice that the payment of the interest accruing for the next quarter would be anticipated. The interest due on October 1, 1901, was paid on September 16, according to announcement on that day. On December 11, 1901, the Secretary of the Treasury directed that five days later the interest should be paid which would fall due January 1, 1902. The amounts so anticipated were:

INTEREST FOR OCTOBER, 1901.

Loan.	Registered.	Coupon.	Total.
Funded loan of 1907	$2,010,234.00	$472,183.00	$2,482,417.00
Consols of 1930	2,169,325.25	60,378.50	2,229,703.75
Total	4,179,559.25	532,561.50	4,712,120.75

INTEREST FOR JANUARY, 1902.

Loan.	Registered.	Coupon.	Total.
Funded loan of 1907	$1,884,501.00	$516,132.00	$2,400,633.00
Consols of 1930	2,176,483.00	53,220.75	2,229,703.75
Total	4,060,984.00	569,352.75	4,630,336.75

On September 13, 1902, the Secretary of the Treasury authorized the anticipation of payment of the interest due October 1. The interest on the consols of 1930 was paid immediately at the date of the notice,

and that on the funded loan of 1907 was paid on September 15. The items of interest so authorized to be prepaid were:

Loan.	Registered.	Coupon.	Total.
Funded loan of 1907	$1,826,742.50	$505,032.50	$2,331,775.00
Consols of 1930	2,182,521.00	47,182.75	2,229,703.75
Total	4,009,263.50	552,215.25	4,561,478.75

October 20, by authority of the Secretary of the Treasury, the interest to accrue November 1, additional to $50,353.25 previously paid with rebate, was anticipated. The total amount of November interest was:

Loan.	Registered.	Coupon.	Total.
Loan of 1908–1918	$389,316.60	$342,050.85	$731,367.45
Loan of 1904	139,055.62	103,573.75	242,629.37
Funded loan of 1925	1,047,321.00	302,621.00	1,349,942.00
Total	1,575,693.22	748,245.60	2,323,938.82

The Secretary of the Treasury on September 25 offered to holders of United States bonds the option to receive in advance their interest maturing between November 1, 1902, and July 1, 1903, at a rebate of two-tenths of 1 per cent a month. This amounted to $20,656,252.72. Payments began October 1, and before November 15 the option was taken to the amount of $3,437,572.65, with a rebate of $39,665.94, on the following classes of bonds:

INTEREST PREPAID IN OCTOBER AND TO NOVEMBER 15, 1902, WITH REBATE.

Loan.	Average amount of principal on which interest was prepaid.	Interest.	Rebate.
Funded loan of 1907	$13,836,350	$415,089.50	$4,959.06
Consols of 1930	174,738,100	2,621,071.50	31,254.01
Loan of 1904	1,579,500	58,993.75	472.45
Loan of 1925	9,168,250	274,036.50	2,253.77
Loan of 1908–1918	4,504,500	68,381.40	726.65
Total	203,826,700	3,437,572.65	39,665.94

BONDS HELD AS SECURITY FOR NATIONAL BANKS.

The bonds held by the Treasurer as security for the notes of the national banks were $9,080,700 less at the end of the fiscal year than twelve months before, but in the same interval the securities held for deposits in the banks were $18,953,200 greater, so that the increase in bonds held for both purposes was $9,872,500.

The consols of 1930 grow in favor with the banks as security both for deposits and circulation, and their volume so pledged increased $11,525,250 during the year, although in many cases these consols were withdrawn and other bonds substituted. Thus the total of these consols outside of the Treasury was, on June 30, $42,394,250, and on November 1, $35,196,700.

By October 1 the bonds to secure circulation were $8,988,740 greater than they were three months earlier, while those pledged for deposits were $11,906,520 greater in amount. A maximum was reached November 1, when the securities for circulation became $338,082,270, an increase of $12,079,500 in the month, while those for deposits were $149,216,920, an increase of $11,853,350.

At the periods mentioned the securities held for the banks are stated in the annexed tables, and the changes during the year are cited:

BONDS HELD FOR NATIONAL BANKS, CLOSE OF JUNE, 1901 AND 1902, AND CHANGES DURING 1902.

Kind of bonds.	Rate.	Held June 30, 1900.	Held June 29, 1901.	Deposited during 1902.	Withdrawn during 1902.	Held June 30, 1902.	Held Oct. 1, 1902.
TO SECURE CIRCULATION.	P. ct.						
Funded loan of 1891	2	$11,009,400	$75,000	.....	$75,000	.....	.....
Consols of 1930	2	237,833,950	312,748,650	$25,804,350	32,569,800	$305,983,200	$310,804,850
Funded loan of 1907	4	16,460,700	6,144,500	221,750	1,005,000	5,361,250	7,412,700
Loan of 1925	4	7,762,850	2,996,600	386,000	1,354,500	2,028,100	2,569,600
Loan of 1904	5	1,301,500	268,900	187,000	.....	455,900	810,900
Loan of 1908–1918	3	10,009,640	3,885,580	442,500	1,118,000	3,210,080	4,429,220
Total	.....	284,378,040	326,119,230	27,041,600	36,122,300	317,038,530	326,027,270
TO SECURE DEPOSITS.							
Funded loan of 1891	2	3,017,000	.....	.....	.....	.....	.....
Consols of 1930	2	44,569,200	75,645,100	20,938,300	7,984,600	88,598,800	88,881,600
Funded loan of 1907	4	17,331,650	6,132,100	3,903,400	473,000	9,562,500	15,448,350
Loan of 1925	4	10,857,450	8,030,950	2,072,600	3,100,800	7,002,750	8,282,750
Loan of 1904	5	4,954,000	440,000	952,000	488,000	904,000	2,076,450
Loan of 1908–1918	3	12,335,180	4,962,300	3,770,500	1,934,200	6,798,600	9,642,020
Bonds of the District of Columbia	3.65	75,000	515,000	120,000	75,000	560,000	1,002,000
Total	.....	93,139,480	95,725,450	31,756,800	14,055,600	113,426,650	125,333,170

BONDS HELD BY THE ASSISTANT TREASURER UNITED STATES, NEW YORK.

TO SECURE DEPOSITS.							
Funded loan of 1891	2	$1,276,000	.....	.....	.....	.....	.....
Consols of 1930	2	.....	$3,627,500	$5,675,500	$338,500	$8,964,500	$8,384,500
Funded loan of 1907	4	5,081,000	1,000,000	239,400	1,219,400	20,000	520,000
Loan of 1925	4	2,459,000	4,166,000	1,222,000	4,368,000	1,020,000	1,020,000
Loan of 1904	5	3,185,000	.....	201,000	156,000	45,000	45,000
Loan of 1908–1918	3	1,703,100	896,500	164,100	168,100	892,500	972,500
Bonds of the District of Columbia	3.65	410,000	350,000	.....	.....	350,000	350,000
Total	.....	14,114,100	10,040,000	7,502,000	6,250,000	11,292,000	11,292,000

BONDS HELD FOR NATIONAL BANKS NOVEMBER 1, 1902.

Title of loan.	Rate of interest.	To secure circulation.	To secure public moneys.	
			In Washington.	In New York.
State and city	.....	.....	$16,377,500	.....
District of Columbia	3.65	.....	1,110,000	$361,000
Consols of 1930	2	$320,617,600	82,241,050	7,885,400
Loan of 1908–1918	3	5,906,720	10,436,720	554,600
Funded loan of 1907	4	8,248,450	18,868,950	544,000
Loan of 1925	4	2,208,600	7,587,750	1,020,000
Loan of 1904	5	1,100,900	2,184,950	45,000
Total	.....	338,082,270	138,806,920	10,410,000

By a ruling of the Secretary of the Treasury, December 6, 1899, the deposits in national banks were limited to par on bonds bearing 4 and 5 per cent interest, to 95 per cent of their face on 3 per cents, and to 90 per cent on the 2 per cents (funded loan of 1891). On September 10, 1901, these distinctions were removed, and all classes of bonds were made available at par for deposits.

The variations in the volume of bonds held for circulation deserve to be noted, for this has fallen off at some times to a considerable amount and at others has increased largely. Thus, June 30, 1901, the bonds pledged for circulation were $326,119,230, and $330,693,180 October 1, 1901. By June 4, 1902, a minimum for recent months was reached at $315,754,630, growing to $317,038,530 June 30, 1902. During the succeeding months the deposits of such securities were frequent and often large, so that the volume by October 1 was $326,027,270; they became on November 1, $338,082,270, the highest on record. This reduction of nearly $14,000,000 between October and June, and increase of nearly $9,000,000 between June and October again, and $12,055,000 more in a single month by November 1, it is fair to recognize as a measure of elasticity in bond deposits in present practice.

The banks with securities pledged for circulation on June 30 numbered 4,553, making an addition during the year of 366 (Table 61, p. 250). Those with pledges for public moneys deposited were 577.

The classification of banks by amount of bonds deposited for circulation, as they stood at the close of the fiscal year, is interesting. For more than 50 per cent of the banks the deposits are less than $100,000, and for nearly one-third of the banks the bonds fall below $25,000 in each case.

The table follows:

NATIONAL BANKS GROUPED ACCORDING TO AMOUNT OF UNITED STATES BONDS DEPOSITED TO SECURE CIRCULATION, JUNE 30, 1902.

Number having on deposit—	
$5,000,000 or more	2
1,000,000 or more, but less than $5,000,000	25
500,000 or more, but less than 1,000,000	47
100,000 or more, but less than 500,000	853
50,000 or more, but less than 100,000	1,193
25,000 or more, but less than 50,000	932
6,250 or more, but less than 25,000	1,501
Total number of national banks	4,553

The largest amount of bonds deposited for this purpose by any bank is $8,308,000.

No less noteworthy is it that out of the 1,501 banks with securities pledged for less than $25,000, 479 have bonds for no more than $10,000 each with the Treasurer. This number increased 235 during the fiscal year. This growth of the smallest banks extends into many States, and keeps on from day to day. It indicates that in the popular opinion these institutions meet the needs and convenience of the local communities. In most cases the bonds pledged for circulation do not much exceed the minimum required by law, but they start a movement in currency which may develop. In the meanwhile, every bank affords the means for the issue of checks and drafts for use in the neighborhood, and to some degree at a distance.

State and City Bonds for Public Deposits.

Under a ruling of the Secretary of the Treasury the Department, since October 1, 1902, has received from national banks tendering them State and city bonds as a part of the security for deposits of public funds, to release United States bonds, which were at once transferred to secure circulation. To November 15 State and city bonds were thus substituted to the amount of $20,338,500. They were as follows:

State of Maryland	$100,000
State of Massachusetts	6,219,000
State of Virginia	473,000
State of Connecticut	50,000
State of Maine	87,000
City of New York, N. Y	7,204,000
City of Philadelphia, Pa	1,069,000
City of Baltimore, Md	426,500
City of Albany, N. Y.	161,000
City of Boston, Mass	963,000
City of Louisville, Ky	588,000
City of Springfield, Mass	50,000
City of Cleveland, Ohio	674,000
City of St. Louis, Mo	942,000
City of Cambridge, Mass	67,000
City of Paterson, N. J	14,000
City of Minneapolis, Minn	30,000
City of Columbus, Ohio	128,000
City of Cincinnati, Ohio	427,000
City of Chicago, Ill	666,000
Total	20,338,500

THE MONETARY STOCK.

To the general stock of money in the country an addition of $80,198,681 was made during the fiscal year. Of this, $67,955,527 was in gold coin and bullion. There was also an increase of $19,735,259 in standard dollars and of $7,360,991 in subsidiary silver. United States notes remained under the law unchanged. Treasury notes fell off $17,783,000. National-bank notes received an increment of $2,929,904.

The gold coin and bullion July 1 was $178,594,611 in excess of all other kinds of money, excluding national-bank notes, which are in a class apart. By October 1 they exceeded all other kinds of money, with the same exception, by $200,368,433.

In the first quarter of the new fiscal year standard silver dollars increased $3,225,660; subsidiary silver increased $804,814; national-bank notes increased $10,321,507, while the Treasury notes decreased $3,164,000.

Comparison may be made from the annexed tables:

MONETARY STOCK.

[This statement represents the monetary stock of the United States as shown by the revised statements for June 30, 1901 and 1902.]

Kind.	In Treasury and mints.	In circulation.	Total stock.
June 29, 1901.			
Gold coin and bullion	$494,848,297	$629,790,765	$1,124,639,062
Silver dollars	453,478,618	66,921,323	520,399,941
Subsidiary silver	10,587,557	79,235,214	89,822,771
Total metallic	958,914,472	775,947,302	1,734,861,774
United States notes	16,635,610	330,045,406	346,681,016
Treasury notes of 1890	258,462	47,524,538	47,783,000
National-bank notes	8,631,386	345,110,801	353,742,187
Total notes	25,525,458	722,680,745	748,206,203
Gold certificates	41,981,330	247,036,359	
Silver certificates	5,370,444	429,643,556	
Total certificates	47,351,774	676,679,915	
Aggregate		2,175,307,962	2,483,067,977
June 30, 1902.			
Gold coin and bullion	560,200,300	632,394,289	1,192,594,589
Silver dollars	471,387,851	68,747,349	540,135,200
Subsidiary silver	11,462,534	85,721,228	97,183,762
Total metallic	1,043,050,685	786,862,866	1,829,913,551
United States notes	12,389,294	334,291,722	346,681,016
Treasury notes of 1890	197,224	29,802,776	30,000,000
National-bank notes	11,195,575	345,476,516	356,672,091
Total notes	23,782,093	709,571,014	733,353,107
Gold certificates	40,213,080	306,399,009	
Silver certificates	7,439,338	446,557,662	
Total certificates	47,652,418	752,956,671	
Aggregate		2,249,390,551	2,563,266,658
November 1, 1902.			
Gold coin and bullion	606,299,127	624,373,645	1,230,672,772
Silver dollars	468,010,664	77,517,158	545,527,822
Subsidiary silver	6,909,608	91,899,715	98,809,323
Total metallic	1,081,219,399	793,790,518	1,875,009,917
United States notes	3,041,934	343,639,082	346,681,016
Treasury notes of 1890	47,722	25,748,278	25,796,000
National-bank notes	13,468,852	367,007,482	380,476,334
Total notes	16,558,508	736,394,842	752,953,350
Gold certificates	24,322,375	342,756,194	
Silver certificates	4,271,562	463,170,438	
Total certificates	28,593,937	805,926,632	
Aggregate	1,126,371,834	2,336,111,992	2,627,963,267

RATIO OF GOLD TO TOTAL STOCK OF MONEY.

The steady growth in the stock of gold in the country and in its ratio to the total stock of money is significant. In five years the ratio has run up from 36.52 to 46.52 to the hundred July 1; October 1 to 46.79, and November 1, 46.82. The details for that period are quite worthy of attention.

RATIO OF GOLD TO TOTAL STOCK OF MONEY FROM JULY 1, 1897.

[From the revised statements of the Treasury Department.]

Date.	Total stock of money.	Gold.	Per cent
July 1, 1897	$1,905,996,619	$696,239,016	36.52
July 1, 1898	2,073,574,442	861,514,780	41.54
July 1, 1899	2,190,093,905	963,498,384	43.99
July 1, 1900	2,339,700,673	1,034,384,444	44.21
July 1, 1901	2,483,147,292	1,124,639,062	45.29
July 1, 1902	2,563,266,658	1,192,594,589	46.52
October 1, 1902	2,597,094,935	1,215,234,885	46.79
November 1, 1902	2,627,963,267	1,230,672,772	46.82

MONEY IN CIRCULATION.

The growth in the volume of money in circulation during the year was $74,082,589, carrying the per capita from 27.98 to 28.43. The element of gold coin and gold certificates was the largest part, and the increase reached $61,966,174, and advanced from 40.30 per cent of the total to 41.73 per cent. In silver of all denominations, including certificates, there was an increase of $25,226,146, of which $6,486,014 was in subsidiary coin. The reduction in treasury notes of $17,721,762 is due to their withdrawal, as elsewhere recorded.

During July, August, and September, 1902, the gold factor in the circulation fell off by $9,683,184, to 40.82 per cent of the total; the United States notes and treasury notes show the continued withdrawal of the latter; national-bank notes increased by $6,906,743, and silver and its representatives by $23,495,163. The total circulation during the quarter advanced $26,296,100, up to 28.64 per capita.

In the month of October the remarkable addition of $60,425,341 was made to the circulation. Of this $38,019,725 was in gold in both its forms; $14,624,223 in national-bank notes, and in all forms of silver, $8,065,909. In United States notes and treasury notes, there was a falling off of $284,516. The percentage of gold to total circulation thus became on November 1, 41.39, and the per capita 29.36, the highest in our history.

Interesting comparisons for years since 1890 are presented in this table:

MONEY IN CIRCULATION AT THE END OF EACH FISCAL YEAR FROM 1890.

Fiscal year.	Money in circulation.					Circulation per capita.	Percentage of gold coin and certificates to total circulation.
	Gold coin and gold certificates.	United States notes and Treasury notes.	National-bank notes.	Silver certificates, standard dollars, and subsidiary silver.	Total.		
1890	$505,089,782	$334,688,977	$181,604,937	$407,867,574	$1,429,251,270	$22.82	35.34
1891	527,382,232	383,556,064	162,221,046	424,281,365	1,497,440,707	23.42	35.22
1892	549,662,443	437,658,596	167,221,517	446,804,631	1,601,347,187	24.56	34.32
1893	501,177,852	471,630,040	174,669,966	449,223,387	1,596,701,245	24.03	31.38
1894	562,316,579	460,206,031	200,219,743	438,066,355	1,660,808,708	24.52	33.85
1895	528,019,270	435,037,154	206,953,051	431,958,998	1,601,968,473	23.20	32.96
1896	497,103,183	351,185,115	215,168,122	442,978,546	1,506,434,966	21.41	32.99
1897	554,875,027	390,384,139	225,544,351	469,406,002	1,640,209,519	22.87	33.82
1898	693,762,052	408,440,459	222,990,988	512,666,396	1,837,859,895	25.15	37.74
1899	712,393,969	421,188,606	237,805,439	532,683,867	1,904,071,881	25.58	37.41
1900	811,539,491	392,980,487	300,115,112	550,515,908	2,055,150,998	26 94	39.48
1901	876,827,124	377,569,944	345,110,801	575,800,093	2,175,307,962	27 98	40.30
1902	938,793,298	364,094,498	345,476,516	601,026,239	2,249,390,551	28.43	41 73
Oct. 1, 1902	929,110,114	369,671,876	352,383,259	624,521,402	2,275,686,651	28.64	40.82
Nov. 1, 1902	967,129,839	369,387,360	367,007,482	632,587,311	2,336,111,992	29.36	41.39

NOTE.—Currency certificates, act of June 8, 1872, are included in the amount of United States notes and Treasury notes.

CIRCULATION AND POPULATION.

Our currency keeps more than equal pace with our population. The money in circulation in 1890 was $22.82 per capita, and the increase of population in the United States for the year was 2.1 per cent, while that of the per capita of circulation was only 1.3 per cent. From 1890 to 1896 the population increased 12.3 per cent, but the per capita of circulation fell off 6.1 per cent. That falling off was 2.1 per cent in 1893, 5.3 per cent in 1895, and 7.7 per cent in 1896, while there was an increase of 1.3 per cent in 1890, 2.6 in 1891, 4.8 in 1892, and 2.0 in 1894. From 1896 the circulation has grown more rapidly than the population. The increase in population of the country from 1896 to 1902 has been 12.4 per cent, while in the circulation per capita the growth has been 32.6 per cent. The increase in money per capita was greatest in 1897 at 6.8 per cent, and in 1898 at 9.9 per cent. In 1902 the population and circulation per capita advanced at nearly the same rate, the former at 1.7 per cent and the latter at 1.5 per cent. The inflow of gold and the consequent issue of gold certificates will, it is likely, keep the percentage of growth of circulation per capita ahead of that of populaiton in the immediate future.

The annexed statement will repay perusal. It presents for thirteen years the money in circulation, the population, the circulation per capita, the per cent of increase of population, and the per cent of increase of circulation per capita per year.

INCREASE IN POPULATION AND IN CIRCULATION PER CAPITA.

Fiscal year.	Money in circulation.	Population.	Circulation per capita.	Per cent of increase of population per year.	Per cent of increase of circulation per capita per year.
1890	$1,429,251,270	62,622,250	$22.82	2.1	1.3
1891	1,497,440,707	63,947,000	23.42	2.1	2.6
1892	1,601,347,187	65,191,000	24.56	1.9	4.8
1893	1,595,701,245	66,456,000	24.03	1.9	a2.1
1894	1,660,808,708	67,740,000	24.52	1.9	2.0
1895	1,601,968,473	69,043,000	23.20	1.9	a5.3
1896	1,506,434,966	70,365,000	21.41	1.9	a7.7
1897	1,640,209,519	71,704,000	22.87	1.9	6.8
1898	1,837,859,895	73,060,000	25.15	1.9	9.9
1899	1,904,071,881	74,433,000	25.58	1.9	1.7
1900	2,055,150,998	76,295,220	26.94	2.5	5.3
1901	2,175,307,962	77,754,000	27.98	1.9	3.8
1902	2,249,390,551	79,117,000	28.43	1.7	1.5
October 1, 1902	2,275,686,651	79,458,000	28.64	.4	.7
November 1, 1902	2,336,111,992	79,572,000	29.36	.1	2.5

a Decrease.

ADVANCE IN VOLUME OF GOLD.

The advance in circulation in the volume of gold, including certificates, within twelve years by the large sum of $433,703,516 is the measure of the greater strength of our circulation. The addition during the past fiscal year was $61,966,174. The increase in the future can hardly be less than $50,000,000 to $60,000,000 a year. The mines are thus confirming the gold standard steadily and invincibly. They are creating an inflation of currency which keeps pace with the enterprise and industry of the country. They are contributing to an advance in prices in general commodities, and add impetus to the prosperity of our people. Such an inflation threatens no peril to the

stability of the currency. While general prices may be advanced moderately without serious disturbance of the monetary and industrial situation, the process can not be continued indefinitely without presenting economic problems of the first importance. To solve them, data are not yet available. The production of gold throughout the world is likely to go forward, both by greater activity in the richer mines and by the application of more efficient processes for securing the metal from the cheaper ores. On the other hand is the question how far new machinery and improved methods may cheapen the cost of articles of prime necessity and of common luxury.

These conflicting factors will have broad and important effects upon the markets, and deserve to be carefully watched. Most probably the movement will not be regular and in one direction, but will vary as the equation of the output of the mines to the products of agriculture and manufactures may vibrate. Yet for the immediate present, and doubtless for a few years at least, the inflow of gold will be in such large measure as to lift the volume of currency to the highest level of all needs of business.

WITHDRAWAL OF TREASURY NOTES.

Under the act of March 14, 1900, silver certificates were substituted for treasury notes as fast as the bullion purchased under the law of 1890 was coined into standard dollars and other treasury notes were canceled on the coinage of subsidiary silver. The result of this process is shown in the annexed table:

	Mar. 14, 1900.	July 1, 1900.	July 1, 1901.	July 1, 1902.	Oct. 1, 1902.
Treasury notes	$86,770,000	$76,027,000	$47,783,000	$30,000,000	$26,836,000
Silver certificates	408,447,504	416,015,000	435,014,000	453,997,000	465,752,000
Total	495,217,504	492,042,000	482,797,000	483,997,000	492,588,000
Subsidiary coinage[a]		1,655,882	7,266,972	11,191,387	11,774,552

[a] Bullion purchased under the act of July 14, 1890, used in the coinage of subsidiary silver (act March 14, 1900, section 8, from March to October 1, 1902).

By the end of the fiscal year 1902 the treasury notes were carried down to $30,000,000 from $86,770,000 on March 14, 1900, and the silver certificates at the same dates rose to $453,997,000 from $408,447,504. The coinage of subsidiary silver in this interval was $11,191,387.

The changes in treasury notes in the first quarter of the fiscal year 1903 were less rapid. The total volume became $26,836,000, while the coinage of subsidiary silver to that date was $11,774,552. The silver certificates attained the maximum of $465,752,000.

UNPARALLELED VOLUME OF GOLD CERTIFICATES.

Gold certificates are issued against deposits of coin for that specific purpose, and are paid for gold bullion and for Government obligations. As the customs received are in gold, except about 2 per cent, or less, this is entirely convenient. Indeed, practically all the revenues are in gold coin or certificates, and thus the expenditures are on the same basis.

On June 27 the gold certificates outstanding for the first time exceeded in volume the United States notes, and were $347,179,089. They stood on June 30 at $346,612,089. The increase in the fiscal year was $57,594,400. Of this sum $40,213,080 was in the general fund of the Treasury as a part of its $103,801,290.97 of free gold.

By October 1 the volume of gold certificates had reached $363,311,089, an increase of $16,699,000 since the first of the fiscal year 1903. The amount in the general fund of the Treasury was $58,929,035, an increase of $18,715,955. By November 1, the volume was $367,078,569.

The growth of gross gold in the Treasury is due to natural causes. No effort is put forth, no artificial means are employed to add to it. It is, however, growing so rapidly that the demands for currency in large denominations are met by the issue of gold certificates as need arises in any quarter for any Government payments. This increment in the money in circulation is healthful, it involves no peril of reaction, and in volume equals the highest estimates of currency required for the increasing population, enterprise, and trade of the nation.

The gold in the Treasury is not idle and useless. It keeps in active circulation as currency the certificates issued against it, and moreover $346,681,016 in United States notes and $30,000,000 in treasury notes, or over $160,000,000 more than its own value. The question may well be considered whether the United States notes may not properly be turned by Congress into gold certificates. They have much that quality already, and the change could be gradually made as the supply of the yellow metal takes on greater proportions.

Those proportions render all our silver currency, paper and coin, strong and sound, equal to the standard prescribed by law.

At the beginning of recent fiscal years and in the latest months the gold in the Treasury set apart for the respective uses has been as here shown:

GOLD IN THE TREASURY.

Date.	Reserve.	For certificates in circulation.	General fund (belonging to Treasury).	Total.
July 1, 1897	$100,000,000	$37,285,339	$41,363,988.57	$178,649,327.57
July 1, 1898	100,000,000	35,811,589	67,752,727.90	203,564,316.90
July 1, 1899	100,000,000	32,655,919	151,104,414.92	283,760,333.92
July 1, 1900	150,000,000	200,733,019	72,844,952.68	423,577,971.68
July 1, 1901	150,000,000	247,036,359	97,811,938.42	494,848,297.42
July 1, 1902	150,000,000	306,399,009	103,801,290.97	560,200,299.97
October 1, 1902	150,000,000	304,382,054	136,124,771.09	590,506,825.09
November 1, 1902	150,000,000	342,756,194	113,542,933.49	606,299,127.49

SOURCES OF GOLD IN THE TREASURY.

The payments of customs in New York in the first ten days of 1902 were in gold certificates 98.2 per cent and in gold coin 0.2 per cent. Thus other kinds of money were used only for fractions or small sums. Since United States notes and silver certificates were by law available for customs, no like ratio of gold has been paid in. In recent years the receipts for customs in New York were as stated below, and as the gold certificates when received by the Treasury set free so much gold, no distinction exists in fact between the paper and the coin.

RECEIPTS FROM CUSTOMS AT THE PORT OF NEW YORK, AND THE AMOUNT PAID IN GOLD, FOR THE FISCAL YEARS NAMED.

Fiscal year.	Total receipts.	Paid in gold.	
		Amount.	Per cent.
1875	[a] $108,590,256	[a] $108,590,256	100.0
1879	[b] 97,343,818	[b] 37,265,940	38.3
1889	146,889,880	125,693,361	85.5
1899	137,482,228	107,896,355	78.4
1901	152,973,471	131,737,888	86.1
1902	165,443,740	155,369,917	93.9

[a] There are no data to show the kinds of money in which these duties were paid, but during this year all duties were payable in coin.

[b] The collections from July to December, inclusive, were $49,127,818, of which $35,970,357 was gold, equal to 73.2 per cent, while the collections from January to June, inclusive, were $48,216,000, of which $1,295,583 was gold, equal to 2.6 per cent.

The customs at all other Treasury offices were paid in about the same ratio in gold, so that from this source altogether the Treasury received in that metal about $215,000,000.

In addition to this sum our gross gold has received increments from bullion at the mints and assay offices during the past fiscal year in the following amounts, which are clearly new gold added to our resources:

DEPOSITS OF GOLD BULLION AT MINTS AND ASSAY OFFICES, FISCAL YEAR 1902.

Philadelphia	$1,358,368.48
San Francisco	44,592,759.89
New Orleans	408,252.74
New York	49,634,947.53
Denver	15,518,454.95
Carson	308,798.46
Boise	1,799,465.29
Helena	2,174,935.23
Charlotte	266,656.63
St. Louis	86,233.31
Deadwood	540,452.93
Seattle	15,353,800.08
Total	132,043,125.52

Deposits of gold coin and certificates were made in New York, for transfer of currency to other points, to the amount of $22,021,500 during the fiscal year.

In the fiscal year the net exports of gold coin and bullion were $20,394,139. Of gold in ore there were net imports of $23,846,443, but this is not reckoned as cash. The subjoined figures cover all kinds of the metal:

IMPORTS AND EXPORTS OF GOLD COIN AND BULLION, AND GOLD IN ORE, DURING THE FISCAL YEAR 1902.

Kind.	Imports.	Exports.	Net imports.	Net exports.
Gold coin and bullion	$27,205,657	$47,599,796		$20,394,139
Gold in ore	24,815,597	969,154	$23,846,443	
Total	52,021,254	48,568,950	3,452,304	

TRANSFERS FOR DEPOSITS IN NEW YORK.

The deposits in New York for the transfer by telegraph of currency to other points, chiefly Chicago and New Orleans, in the calendar year 1902 began early, and were larger than in any recent year except 1900. Previous to 1901 such deposits were required in the kinds of money to be paid by transfer, except as the holdings of the Treasury in paper currency were adequate to meet such demands. In that year one-half was accepted in gold and one-half in kind. In the current calendar year all restrictions have been waived, and as a matter of convenience to the depositor gold has been taken and payments on the transfer made as he wished, usually in United States notes and silver certificates of $10 and under, sometimes part in that form and part in larger denominations. The Department has been able to concede these accommodations by reason of turning all paper except gold certificates into denominations below $20. Upon transfers no distinction between kinds of money is allowed to obstruct transactions. This policy is meant to facilitate the supply of currency at any point south and west for the movement of crops. Thus in 1902 all such deposits were in gold, except $40,000 in United States notes and $37,000 in silver certificates. In August $5,000 in United States notes and $10,000 in silver certificates were deposited, and in October $105,000 was in United States notes.

The same privilege to accept deposits for transfer by telegraph to New Orleans was conceded to Chicago on request from that city on July 5, 1902. A single transaction of $50,000 occurred in July and another of $75,000 in October.

The tables record the deposits in New York for the months when any were received and the corresponding payments by telegraph:

Transactions.	Gold coin and certificates.	United States notes.	Treasury notes.	Silver certificates.	Total.
1899—Receipts:					
In January	$713,500				$713,500
In March	10,000	$445,000	$45,000	$50,000	550,000
In August	850,000				850,000
In September	2,800,000	595,000		280,000	3,675,000
In October	3,965,000	262,500	7,500	60,000	4,295,000
In November	2,050,000	175,000			2,225,000
In December	2,950,000				2,950,000
Total	13,338,500	1,477,500	52,500	390,000	15,258,500
Paid by the Treasurer and assistant treasurers of the United States:					
Washington—					
In January				38,500	38,500
In March		380,000	170,000		550,000
In August	250,000				250,000
Total	250,000	380,000	170,000	38,500	838,500
Chicago—					
In August	600,000				600,000
In September	1,600,000				1,600,000
In October	2,400,000				2,400,000
In December	300,000				300,000
Total	4,900,000				4,900,000
St. Louis—					
In December	250,000				250,000
New Orleans—					
In January	150,000	248,900	50,400	225,700	675,000
In September	1,000,000	840,000		225,000	2,075,000
In October	1,565,000	262,500	7,500	60,000	1,895,000
In November	2,050,000	175,000			2,225,000
In December	2,050,000	225,000	90,000	35,000	2,400,000
Total	6,825,000	1,751,400	147,900	545,700	9,270,000

Transactions.	Gold coin and certificates.	United States notes.	Treasury notes.	Silver certificates.	Total.
1900—Receipts:					
In February	$1,500,000				$1,500,000
In March	600,000				600,000
In April	900,000				900,000
In July	150,000				150,000
In August	250,000				250,000
In September	5,567,000	$627,000		$391,000	6,585,000
In October	7,259,000	554,000	$31,000	407,000	8,251,000
In November	3,475,000			225,000	3,700,000
In December	4,903,000	12,000		185,000	5,100,000
Total	24,604,000	1,193,000	31,000	1,208,000	27,036,000
Paid by the Treasurer and assistant treasurers of the United States:					
Washington—					
In October	100,000	100,000			200,000
Chicago—					
In February	1,300,000				1,300,000
In March	600,000				600,000
In April	900,000				900,000
In September	500,000	100,000			600,000
In October	1,655,000	1,075,000		20,000	2,750,000
In November	500,000	500,000			1,000,000
In December	300,000	100,000			400,000
Total	5,755,000	1,775,000		20,000	7,550,000
St. Louis—					
In September	655,000	655,000		190,000	1,500,000
In October	1,058,000	574,000		118,000	1,750,000
In November	50,000	50,000			100,000
Total	1,763,000	1,279,000		308,000	3,350,000
New Orleans—					
In February	100,000	16,000	20,000	64,000	200,000
In July	150,000				150,000
In August	250,000				250,000
In September	4,155,000	195,000		135,000	4,485,000
In October	2,746,000	505,000		300,000	3,551,000
In November	2,375,000			225,000	2,600,000
In December	3,874,000	641,000		185,000	4,700,000
Total	13,650,000	1,357,000	20,000	909,000	15,936,000
1901—Receipts:					
In March	395,000	30,000			425,000
In April	200,000				200,000
In May	995,000	353,000		132,000	1,480,000
In June	348,000	40,000		82,000	470,000
In July	1,087,000	88,000		200,000	1,325,000
In August	3,251,500	128,500		70,000	3,450,000
In September	3,874,000			611,000	4,485,000
In October	3,525,000			440,000	3,965,000
In November	1,668,000	37,000		25,000	1,730,000
In December	5,208,500	215,000	10,000	72,000	5,505,000
Total	20,551,500	841,500	10,000	1,632,000	23,035,000
Paid by the Treasurer and assistant treasurers of the United States:					
Washington—					
In March				25,000	25,000
In May	200,000				200,000
In July				50,000	50,000
In September	100,000				100,000
In December		5,000		20,000	25,000
Total	300,000	5,000		95,000	400,000
Baltimore—					
In September				30,000	30,000
In October				25,000	25,000
Total				55,000	55,000
Cincinnati—					
In March	100,000				100,000
In October	35,000	17,500		17,500	70,000
Total	135,000	17,500		17,500	170,000

Transactions.	Gold coin and certificates.	United States notes.	Treasury notes.	Silver certificates.	Total.
Paid by the Treasurer and assistant treasurer of the United States—C't'd.					
Chicago—					
In March	$100,000	$100,000			$200,000
In April	120,000	40,000		$40,000	200,000
In July	450,000	300,000		150,000	900,000
In August	1,592,000	880,000		678,000	3,150,000
In September	1,070,000	620,000		360,000	2,050,000
In November	100,000	50,000		50,000	200,000
In December	800,000	380,000		120,000	1,300,000
Total	4,232,000	2,370,000		1,398,000	8,000,000
St. Louis—					
In September	250,000	180,000		70,000	500,000
In October	150,000	90,000		60,000	300,000
Total	400,000	270,000		130,000	800,000
New Orleans—					
In March	50,000	50,000			100,000
In May	735,000	413,000		132,000	1,280,000
In June	308,000	80,000		82,000	470,000
In July	112,000	193,000		70,000	375,000
In August		180,000		120,000	300,000
In September	585,750	367,250		852,000	1,805,000
In October	1,875,000	670,000		1,025,000	3,570,000
In November	838,000	337,000		355,000	1,530,000
In December	3,091,000	555,000		534,000	4,180,000
Total	7,594,750	2,845,250		3,170,000	13,610,000
1902—Receipts:					
In January	650,000	40,000			690,000
In February	500,000				500,000
In March	700,000				700,000
In April	350,000				350,000
In May	975,000				975,000
In June	233,000			37,000	270,000
In July	2,280,000				2,280,000
In August	2,355,000	5,000		10,000	2,370,000
In September	5,096,000				5,096,000
In October	3,425,000	105,000			3,530,000
Total	16,564,000	150,000		47,000	16,761,000
Paid by the Treasurer and assistant treasurers of the United States:					
Cincinnati—					
In March	120,000	40,000		40,000	200,000
In April	185,000	115,000		50,000	350,000
In August	105,000	70,000		25,000	200,000
Total	410,000	225,000		115,000	750,000
Chicago—					
In February	200,000	200,000		100,000	500,000
In March	200,000	200,000		100,000	500,000
In July	640,000	180,000		280,000	1,100,000
In August	565,000	460,000		225,000	1,250,000
In September	910,000	535,000		355,000	1,800,000
In October	655,000	205,000		340,000	1,200,000
Total	3,170,000	1,780,000		1,400,000	6,350,000
New Orleans—					
In January	445,000	145,000		100,000	690,000
In May	725,000	160,000		90,000	975,000
In June	150,000	70,000		50,000	270,000
In July	730,000	260,000		190,000	1,180,000
In August	430,000	265,000		225,000	920,000
In September	1,825,000	834,000		637,000	3,296,000
In October	1,415,000	525,000		390,000	2,330,000
Total	5,720,000	2,259,000		1,682,000	9,661,000

EXCHANGE PAID FOR GOLD RECEIVED AT WESTERN MINTS AND ASSAY OFFICES.

Gold taken by the assay office in New York is paid for by check on the assistant treasurer in that city. At the other assay offices and at the mints the depositors receive for their gold, currency, checks on local banks, or exchange, at their option.

Gold coin to the amount of $1,300,000 was transferred from San Francisco to the depositary banks at Seattle for credit of the assay office at that point, to be used in the payment of checks on such banks when gold was desired. After September 17, 1902, payments for deposits in San Francisco were made in New York on telegraph notice. Such transactions were, up to November 1, $10,473,000.

The subjoined table records the exchange paid in Chicago, New York, and San Francisco for the several offices in 1901 and 1902, and for the first quarter of 1903:

Exchange.	United States mint, Denver.	United States assay offices.			
		Boise.	Deadwood.	Helena.	Seattle.
ON CHICAGO.					
Fiscal year 1901.					
1900—July	$1,000,000	$150,000	$50,000	$200,000	
August	500,000	100,000		100,000	$400,000
September	500,000	150,000		100,000	400,000
October	1,000,000			200,000	
November	500,000	100,000	50,000	100,000	500,000
December	500,000	50,000		200,000	
1901—January	500,000	50,000		200,000	
February	500,000		50,000		
March	500,000	50,000		100,000	
April	500,000			100,000	
May	1,000,000	150,000	50,000	100,000	
June	500,000	100,000		100,000	
Total	7,500,000	900,000	200,000	1,500,000	1,300,000
Fiscal year 1902.					
1901—July	500,000	150,000	50,000	200,000	
August	500,000	100,000	50,000	100,000	200,000
September		100,000	50,000	100,000	200,000
October	500,000	150,000		100,000	
November		50,000	50,000	200,000	
December	500,000	100,000	50,000	100,000	
1902—January	500,000	100,000		100,000	
February	500,000	100,000		100,000	
March	500,000	50,000	50,000	100,000	
April	500,000	100,000	50,000	100,000	
May		100,000	50,000		
June	500,000	100,000	75,000	100,000	200,000
Total	4,500,000	1,150,000	475,000	1,300,000	600,000
Fiscal year 1903.					
1902—July	500,000	100,000	75,000		300,000
August	500,000	150,000	150,000		
September	658,773	100,000	75,000		
October	500,000	50,000	75,000		250,000
Total	2,158,773	400,000	375,000		550,000

Exchange.	United States mints.		United States assay offices.	
	San Francisco.	Denver.	Charlotte.	Seattle.
ON NEW YORK.				
Fiscal year 1901.				
1900—July	$7,500,000	$985,000	$20,000	$2,000,000
August		1,017,000		3,000,000
September	3,000,000	565,000	20,000	2,000,000
October	10,000,000	1,000,000	40,000	3,000,000
November	5,000,000	698,000		
December		1,030,000	20,000	
1901—January	1,300,000	901,000	20,000	200,000
February		852,000		
March	1,000,000	1,087,000	20,000	
April		1,090,000	20,000	
May	1,000,000	860,000	20,000	
June		658,000		1,000,000
Total	28,800,000	10,821,000	180,000	11,200,000
Fiscal year 1902.				
1901—July	3,000,000	625,000	20,000	3,000,000
August	4,000,000	920,000	20,000	2,500,000
Seytember	5,000,000	665,000	20,000	1,000,000
October	3,000,000	879,000	20,000	3,500,000
November	5,500,000	810,000	20,000	
December		1,100,000	20,000	
1902—January		900,000	20,000	
February		1,000,000	20,000	
March		1,000,000	20,000	
April		900,000	20,000	
May		900,000	20,000	200,000
June		900,000	20,000	1,000,000
Total	20,500,000	10,599,000	240,000	11,200,000
Fiscal year 1903.				
1902—July	2,000,000	1,100,000	20,000	2,000,000
August	2,000,000	900,000	20,000	1,000,000
September	2,000,000	936,244	20,000	1,000,000
October		725,000	40,000	2,000,000
Total	6,000,000	3,661,244	100,000	6,000,000

Exchange.	United States assay office at Helena.
ON PHILADELPHIA.	
Fiscal year 1902.	
1902—June	$100,000
Fiscal year 1903.	
1902—July	500,000
October	100,000
Total	600,000

Exchange.	United States mint at Carson.	United States assay offices.	
		Boise.	Seattle.
ON SAN FRANCISCO.			
Fiscal year 1901.			
1900—July		$50,000	$500,000
August	$25,000	50,000	
September		50,000	
October	50,000	50,000	
November		50,000	
December		50,000	
1901—January		50,000	
February			
March	50,000	50,000	
April		50,000	
May		50,000	
June	50,000	100,000	
Total	175,000	600,000	500,000
Fiscal year 1902.			
1901—July		100,000	
August	50,000	50,000	
September		50,000	
October	50,000	100,000	
November			
December		100,000	
1902—January			
February		50,000	
March			
April	50,000	50,000	
May		50,000	
June		50,000	
Total	150,000	600,000	
Fiscal year 1903.			
1902—July	50,000		
August		50,000	
September		50,000	
October	50,000		
Total	100,000	100,000	

CLASSIFICATION OF CURRENCY OF $20 AND BELOW, AND ABOVE $20.

While during the year ended September 30, 1901, the paper currency of $20 and below received an addition of $75,956,845, only $9,794,500 was added to paper of denominations above $20. If we reckon the gold coin, all of which is of $20 and below, it will be noted that the small denominations were over 80 per cent of all our money.

For the year ended September 30, 1902, an increase was made of $71,283,129, in paper of $20 and under, while that in paper of over $20 was $4,745,750, so that the percentage of small denominations to the total was over 83.

The variations in the currency during the past five years are illustrated by the annexed table, in which separation is made at denominations of $20:

Denomination.	September 30— 1898.	1899.	1900.	1901.	1902.
Gold coin	$622,649,812	$646,561,185	$620,047,309	$631,201,267	$624,728,060
Paper currency:					
One dollar	51,643,535	57,810,855	61,528,399	67,679,561	74,371,228
Two dollars	32,782,988	35,983,321	38,967,286	42,801,259	44,574,381
Five dollars	282,639,237	291,845,505	298,136,679	310,570,049	342,478,389
Ten dollars	316,745,997	324,244,112	376,617,472	409,071,052	427,956,502
Twenty dollars	219,279,106	251,872,486	291,952,816	313,037,576	325,062,126
Total twenty dollars and under in paper	903,090,863	961,756,279	1,067,202,652	1,143,159,497	1,214,442,626
Aggregate twenty dollars and under in gold and paper	1,525,740,675	1,608,317,464	1,687,249,961	1,774,360,764	1,839,170,686
Fifty dollars	50,452,390	60,229,915	61,922,965	57,972,315	57,870,865
One hundred dollars	60,382,470	68,990,170	81,314,170	86,506,570	85,628,270
Five hundred dollars	19,353,500	21,647,500	22,104,750	23,229,500	21,959,000
One thousand dollars	68,053,500	68,923,500	78,788,500	73,011,500	72,892,500
Five thousand dollars	5,855,000	14,630,000	29,325,000	28,650,000	29,775,000
Ten thousand dollars	29,960,000	42,810,000	68,100,000	81,980,000	87,970,000
Total fifty dollars and over	234,056,860	277,231,085	341,555,385	351,349,885	356,095,635
Aggregate paper	1,137,147,723	1,238,987,364	1,408,758,037	1,494,509,382	1,570,538,261
Unknown, destroyed	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Net paper	1,136,147,723	1,237,987,364	1,407,758,037	1,493,509,382	1,569,538,261
Aggregate gold and paper	1,758,797,535	1,884,548,549	2,027,805,346	2,124,710,649	2,194,266,321

KINDS OF CURRENCY.

The classification of the currency, by kinds, in circulation at the periods stated is made up from the latest revised statements:

Kind.	July 1, 1901.	July 1, 1902.	Oct. 1, 1902.
Gold coin	$629,790,765	$532,394,289	$624,728,060
Gold certificates	247,036,359	306,399,009	304,382,054
Standard silver dollars	66,921,323	68,747,349	75,043,719
Silver certificates	429,643,556	446,557,662	459,571,478
Subsidiary silver	79,235,214	85,721,228	89,906,205
Treasury notes of 1890	47,524,538	29,802,776	26,741,790
United States notes	330,045,406	334,291,722	342,930,086
National-bank notes	345,110,801	345,476,516	352,383,259
Total	2,175,307,962	2,249,390,551	2,275,686,651

RATIO OF $10 AND LESS TO ALL PAPER.

The large volume of gold certificates issued since 1890, all of $20 and upward, for a while reduced the ratio of small notes to the total of all denominations. The small notes and certificates have regained

their predominance and this lead is asserted in each of the denominations of $10 and less. The comparison is made for six years:

Date.	Total paper currency.	Denominations of $10 and less.				
		One dollar.	Two dollars.	Five dollars.	Ten dollars.	Total.
July 1, 1897	$1,169,788,004	3.96	2.57	22.86	25.56	54.95
July 1, 1898	1,139,339,402	4.36	2.80	24.19	26.89	58.24
July 1, 1899	1,144,266,891	4.88	2.98	25.10	28.11	61.07
July 1, 1900	1,380,832,739	4.36	2.74	21.20	26.72	55.02
July 1, 1901	1,473,177,892	4.34	2.74	20.72	27.11	54.91
July 1, 1902	1,534,962,196	4.63	2.77	21.34	27.44	56.18
October 1, 1902	1,570,573,703	4.73	2.83	21.80	27.24	56.63
November 1, 1902	1,588,473,919	4.74	2.82	21.92	27.45	56.93

DEMAND FOR SMALL DENOMINATIONS.

The demands of the people for notes of small denominations have surprised the closest students of the currency. Year by year estimates of the maximum to be required have been proved by experience inadequate, and further provision was called for to meet the growing needs of business. The process is still going on and the ratio of small denominations to the circulation has not yet culminated. In 1890 the number of pieces of Government paper currency issued was 37,065,880, and in 1902 it was 116,697,874. The average value was, in 1890, $6.613, and in 1902, $4.

In order to provide the notes and certificates, the facilities for printing, sealing, and separating them have been often extended and are now sufficient for immediate requirements. The reserve desirable to permit the paper, printing, and sealing to dry and harden so as to secure the best results in appearance and wear is not yet as large as economy and prudence suggest. In the coming year it is hoped this criticism will be no longer justified.

PAPER CURRENCY PREPARED FOR ISSUE.

The number of pieces of paper currency prepared for issue, which was 30,976,881 in 1890, was carried up to 136,721,000 in 1902. In order to provide for exigencies additions to the supply has been necessary in all denominations, but most of all in the smaller ones.

As the law of March 14, 1900, directed the withdrawal of treasury notes, the reserve of such paper prepared for issue was destroyed, under instructions from the Secretary, May 22, 1902. Only a few samples were retained. The amount was $36,356,500, and the pieces were 1,223,900.

The problem presented year by year, and the way it has been solved, will be appreciated by a statement of the currency prepared and issued, by number of pieces, total value, and average value, at intervals since 1890:

NUMBER OF PIECES OF PAPER CURRENCY PREPARED FOR ISSUE IN THE FISCAL YEARS 1890, 1895, 1900, AND 1902.

Fiscal year.	Number of notes and certificates.	Total value.	Average value.
1890	30,976,881	$188,846,000	$6.096
1895	56,012,500	296,816,000	5.299
1900	87,111,000	526,296,000	6.041
1902	136,721,000	591,580,000	4.326

NUMBER OF PIECES OF PAPER CURRENCY ISSUED IN THE FISCAL YEARS 1890, 1895, 1900, AND 1902.

Fiscal year.	Number of notes and certificates.	Total value.	Average value.
1890	37,065,880	$245,142,000	$6.613
1895	55,932,798	301,805,983	5.395
1900	78,132,176	495,545,000	6.342
1902	116,697,874	466,908,000	4.000

CURRENCY ISSUED AND REDEEMED.

The currency issued and redeemed during the two past years shows the development month by month, by the falling off in average value of the pieces. The number issued ranges in each of the later months from 10,000,000 to 10,565,535, and while the redemptions follow a little after the issues, they can not be much delayed or fall very far below them.

In July, August, and September of the present fiscal year the number of pieces issued was 7,133,928 greater than in the same months of the preceding year, while the redemptions in these later months were 7,078,404 more than in the period with which those are compared. It will be noted that the redemptions for this quarter are a little in excess of the issues of that of the preceding year. The average value has become $3.624 by reason of the growing volume of small denominations.

The details by months follow:

UNITED STATES PAPER CURRENCY ISSUED DURING THE FISCAL YEARS 1901 AND 1902.

Month.	Fiscal year 1901.			Fiscal year 1902.		
	Number of notes and certificates.	Amount.	Average value of notes and certificates.	Number of notes and certificates.	Amount.	Average value of notes and certificates.
July	7,374,845	$30,622,000	$4.152	8,954,571	$38,438,000	$4.292
August	7,259,708	38,768,000	5.340	9,325,791	38,666,000	4.146
September	6,808,916	31,444,000	4.618	8,319,435	33,366,000	4.010
October	6,513,312	33,616,000	5.161	9,852,562	45,840,000	4.652
November	6,594,841	28,698,000	4.351	9,895,477	35,906,000	3.628
December	7,961,238	36,460,000	4.579	10,059,405	35,134,000	3.492
January	8,297,324	46,500,000	5.604	10,036,329	45,722,000	4.555
February	7,131,144	29,032,000	4.071	8,757,817	35,986,000	4.109
March	8,511,909	32,134,000	3.775	10,565,535	40,454,000	3.829
April	8,588,000	37,800,000	4.401	10,392,840	42,744,000	4.055
May	8,360,146	31,010,000	3.713	10,508,937	38,302,000	3.644
June	7,899,648	31,018,000	3.926	10,029,175	36,350,000	3.624
Total	91,291,031	407,102,000	4.459	116,697,874	466,908,000	4.000

UNITED STATES PAPER CURRENCY ISSUED DURING THE FIRST QUARTER OF 1902 AND OF 1903.

Month.	First quarter fiscal year 1902.			First quarter fiscal year 1903.		
	Number of notes and certificates.	Amount.	Average value of notes and certificates.	Number of notes and certificates.	Amount.	Average value of notes and certificates.
July	8,954,571	$38,438,000	$4.292	11,620,563	$50,582,000	$4.352
August	9,325,791	38,666,000	4.146	10,680,778	37,544,000	3.515
September	8,319,435	33,366,000	4.010	11,436,384	41,468,000	3.626
Total	26,599,797	110,470,000	4.152	33,737,725	129,594,000	3.841

UNITED STATES PAPER CURRENCY REDEEMED DURING THE FISCAL YEARS 1901 AND 1902.

Month.	Fiscal year 1901.			Fiscal year 1902.		
	Number of notes and certificates.	Amount.	Average value of notes and certificates.	Number of notes and certificates.	Amount.	Average value of notes and certificates.
July	6,481,124	$29,795,000	$4.597	7,397,907	$36,201,000	$4.893
August	6,486,296	30,003,500	4.625	7,271,907	32,624,000	4.486
September	5,540,289	30,066,000	5.426	4,969,699	25,367,600	5.104
October	5,490,824	27,164,000	4.947	7,513,328	29,975,000	3.989
November	5,795,132	25,144,300	4.338	7,751,997	29,886,000	3.855
December	5,875,122	26,967,000	4.590	8,513,277	33,583,000	3.944
January	9,181,434	36,975,100	4.027	10,453,793	40,846,000	3.907
February	7,853,280	32,007,290	4.075	9,962,214	36,255,000	3.639
March	7,117,596	30,269,000	4.252	8,788,671	33,730,000	3.837
April	6,863,500	29,384,000	4.281	9,242,290	35,341,000	3.823
May	7,348,631	31,189,200	4.244	9,448,680	36,318,000	3.843
June	7,361,327	29,927,100	4.065	9,346,931	37,957,000	4.050
Total	81,394,555	358,891,490	4.409	100,660,694	408,083,600	4.054

UNITED STATES PAPER CURRENCY REDEEMED DURING THE FIRST QUARTER OF 1902 AND OF 1903.

Month.	First quarter fiscal year 1902.			First quarter fiscal year 1903.		
	Number of notes and certificates.	Amount.	Average value of notes and certificates.	Number of notes and certificates.	Amount.	Average value of notes and certificates.
July	7,397,908	$36,201,000	$4.893	10,025,308	$39,196,000	$3.909
August	7,271,907	32,624,000	4.486	8,827,818	33,633,000	3.809
September	4,969,699	25,367,600	5.104	7,864,792	31,445,000	3.997
Total	19,639,514	94,192,600	4.796	26,717,918	104,274,000	3.902

PERCENTAGE OF VALUE OF NOTES AND CERTIFICATES.

The significance of the annexed table will be noted. Of the total redemptions, those of $1 from 1901 to 1902 rose from 65.3 per cent to 74 per cent of the outstanding; of $2, from 57.2 to 68 per cent; of $5, from 36.1 to 41.2 per cent. Those of $10 show an increase of only one-tenth of 1 per cent. It will be observed that of $500, the redemptions advanced from 13.5 per cent to 25.3 per cent, while the certificates of $10,000 redeemed went up from 42.3 per cent to 46.6 per cent.

PERCENTAGE OF OUTSTANDING GOVERNMENT PAPER CURRENCY OF EACH DENOMINATION REDEEMED EACH MONTH OF THE FISCAL YEARS 1901 AND 1902.

Denomination.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
1901.													
One dollar	5.2	5.2	4.6	4.6	4.9	4.9	7.3	6.7	6.0	5.7	5.8	6.0	65.3
Two dollars	4.5	4.6	4.1	4.2	4.3	4.4	6.7	5.5	5.2	5.0	5.1	5.1	57.2
Five dollars	3.3	3.3	2.5	2.5	2.6	2.6	4.5	3.6	3.2	3.1	3.5	3.3	36.1
Ten dollars	2.9	2.9	2.2	1.9	2.1	2.2	3.8	2.9	2.5	2.4	2.8	2.6	31.0
Twenty dollars	2.3	2.2	2.0	1.5	1.5	1.4	2.3	2.1	1.9	1.7	1.9	1.9	23.0
Fifty dollars	2.3	2.4	4.6	2.1	2.1	1.9	1.9	1.8	1.8	1.8	2.0	1.9	28.9
One hundred dollars	1.7	1.8	1.6	1.8	1.4	1.4	1.4	1.4	1.4	1.5	1.6	1.5	18.3
Five hundred dollars	1.0	0.9	1.1	2.4	1.2	2.2	0.8	0.8	0.7	0.8	0.8	1.0	13.5
One thousand dollars	0.7	0.7	4.0	4.1	2.9	3.2	0.5	0.3	0.3	1.6	1.0	0.5	20.2
Five thousand dollars	0.7	0.3	1.3	0.5	0.3	0.6	0.3	0.5	0.7	0.2	0.6	0.1	6.1
Ten thousand dollars	3.9	4.1	5.3	4.3	2.2	4.2	2.9	4.0	5.4	4.4	3.5	3.8	42.3
Total	2.8	2.8	2.8	2.5	2.3	2.4	3.3	2.9	2.7	2.6	2.8	2.7	32.1
1902.													
One dollar	5.7	5.7	3.7	5.8	6.1	6.5	7.3	7.9	6.8	6.9	6.7	6.7	74.0
Two dollars	5.1	4.8	3.2	5.0	5.5	5.9	6.7	7.3	6.1	6.2	6.1	6.0	68.0
Five dollars	3.5	3.3	2.2	3.2	3.0	3.3	4.9	3.7	3.4	3.8	4.2	4.0	41.2
Ten dollars	2.8	2.4	1.6	2.2	2.1	2.6	3.6	2.7	2.5	2.8	3.0	2.9	31.1
Twenty dollars	1.9	1.7	1.2	1.5	1.5	1.6	2.4	1.9	1.7	2.0	2.0	2.0	22.1
Fifty dollars	1.3	1.9	1.5	2.1	2.1	2.1	2.3	1.7	1.9	1.9	1.9	1.9	23.7
One hundred dollars	1.9	1.8	1.4	1.7	1.7	1.8	1.8	1.4	1.4	1.6	1.5	1.7	19.8
Five hundred dollars	1.1	1.7	5.3	1.9	3.4	2.4	2.0	1.2	1.1	1.4	1.4	1.3	25.3
One thousand dollars	1.7	4.8	1.6	1.3	1.2	1.4	1.5	1.4	0.8	0.9	0.9	1.0	19.0
Five thousand dollars	0.1	0.0	0.2	0.1	0.2	0.3	0.2	0.1	0.2	0.1	0.1	0.6	2.4
Ten thousand dollars	8.4	3.1	6.6	3.6	3.6	4.2	1.2	3.5	4.6	2.9	2.3	4.4	46.6
Total	3.2	2.8	2.2	2.6	2.5	2.8	3.5	3.1	2.8	3.0	3.0	3.2	34.6

SHIPMENTS OF CURRENCY FROM WASHINGTON.

The currency distributed from the Treasury in Washington to the subtreasuries and to banks during the fiscal year 1902 amounted to $387,319,888.75, against $319,912,188.21 during the preceding twelve months. In 1901, 10,817 packages were sent by registered mail and 40,880 by express, while in 1902, 11,800 went by registered mail and 48,091 by express. Thus the total number of packages was greater by 8,194, or 15.8 per cent, in the later year than in the preceding, while the amount of currency distributed was $67,407,694.54, or 21 per cent greater. The money sent to the assistant treasurers passes very soon into general business in payment of Government obligations and in redemptions. The amount so sent in 1902 exceeded by $45,041,000 the like shipments in the year before. The packages forwarded to banks enter directly into circulation. Their number, therefore, has special significance, and the amount illustrates and is a part of the general activity in industries and trade. It will be noted that such packages were 4,086 more numerous and were worth $22,328,914 more in 1902 than in 1901.

The tables for 1901 and 1902, by months, deserve attentive study.

Shipments of Moneys for Fiscal Year 1901.

[Cents are omitted in this table.]

Month.	Registered mail.		Assistant treasurers.		Banks and others.		Total by express.	
	Number of packages.	Amount.	Number of packages.	Amount.	Number of packages.	Amount.	Number of packages.	Amount.
1900.								
July	826	$52,676	577	$16,093,000	2,557	$7,985,200	3,134	$24,078,200
August	829	44,515	756	21,648,000	2,482	9,852,340	3,238	31,500,340
September	787	49,391	825	23,270,000	2,841	9,226,295	3,666	32,496,295
October	922	61,181	698	22,662,000	2,750	8,375,474	3,448	31,037,474
November	905	42,836	627	17,636,000	2,540	4,894,216	3,167	22,530,216
December	1,038	52,573	767	20,008,000	2,990	9,922,681	3,757	29,930,681
1901.								
January	1,065	58,341	864	17,544,000	2,819	10,746,513	3,683	28,290,513
February	880	40,921	663	12,484,000	2,234	6,920,918	2,897	19,404,918
March	941	50,213	872	17,478,000	2,732	8,475,995	3,604	25,953,995
April	945	50,224	858	19,406,000	2,708	8,626,249	3,566	28,032,249
May	853	57,402	691	16,336,000	2,728	7,319,376	3,419	23,655,376
June	826	42,436	657	14,162,000	2,644	8,237,215	3,301	22,399,215
Total	10,817	602,716	8,855	218,727,000	32,025	100,582,472	40,880	319,309,472

RECAPITULATION.

	Number of packages.	Amount.
Registered mail	10,817	$602,716
Express	40,880	319,309,472
Total	51,697	319,912,188

Shipments of Moneys for Fiscal Year 1902.

[Cents are omitted in this table.]

Month.	Registered mail.		Assistant treasurers.		Banks and others.		Total by express.	
	Number of packages.	Amount.	Number of packages.	Amount.	Number of packages.	Amount.	Number of packages.	Amount.
1901.								
July	886	$53,214	983	$23,942,000	2,595	$7,477,307	3,578	$31,419,307
August	924	56,990	1,086	24,138,000	2,694	8,011,868	3,780	32,149,868
September	789	41,569	883	22,782,000	2,623	8,207,557	3,506	30,989,557
October	1,037	61,518	930	25,984,000	3,378	11,762,511	4,308	37,746,511
November	951	55,015	869	18,950,000	3,187	11,747,264	4,056	30,697,264
December	985	39,019	788	16,524,000	3,557	13,485,012	4,345	30,009,012
1902.								
January	1,283	67,822	1,129	23,994,000	3,098	9,779,980	4,227	33,773,980
February	989	50,793	857	18,092,000	2,715	9,683,867	3,572	27,775,867
March	1,040	54,555	1,246	25,510,000	3,058	9,917,929	4,304	35,427,929
April	1,052	59,832	1,187	26,802,000	3,013	10,319,066	4,200	37,121,066
May	973	58,122	1,065	19,470,000	3,054	10,463,514	4,119	29,933,514
June	891	42,048	957	17,580,000	3,139	12,055,506	4,096	29,635,506
Total	11,800	640,502	11,980	263,768,000	36,111	122,911,386	48,091	386,679,386

RECAPITULATION.

	No. of packages.	Amount.
Registered mail	11,800	$640,502
Express	48,091	386,679,386
Total	59,891	387,319,888

CURRENCY FOR THE PHILIPPINES.

Since the occupation of the Philippines by the United States in May, 1898, considerable amounts of American currency have been sent thither to be used for Government purposes. This money has been paid by the assistant treasurer of the United States in San Francisco to various disbursing officers. The sums and kinds of currency are reported to September 15 from the beginning, covering a period of four years. The paper, it will be seen, is $15,680,000, to $10,290,000 in gold coin, $599,500 in standard silver dollars, $702,800 in subsidiary silver, and $58,750 in minor coins. The aggregate is $27,331,050. No data can be secured to show what part of this currency has been returned from the islands.

Gold coin:		
Double eagles	$1,510,000	
Eagles	4,160,000	
Half eagles	4,620,000	
		$10,290,000
Standard silver dollars		599,500
Subsidiary silver:		
Halves	$282,000	
Quarters	249,000	
Dimes	171,800	
		702,800
Minor coin:		
Five cents, nickel	47,200	
One cent, bronze	11,550	
		58,750
Paper currency:		
Treasury notes of 1890	200,000	
United States notes	8,320,000	
Gold certificates	1,740,000	
Silver certificates	5,420,000	
		15,680,000
Total		27,331,050

MAINTENANCE OF PARITY.

The act of March 14, 1900, makes it the duty of the Secretary of the Treasury to maintain the parity of value of all forms of money issued or coined by the United States with the gold standard defined and fixed by that law. This parity has been and is now easily maintained, and all kinds of Government money are exchangeable with each other.

This has been rendered practicable by carrying out the statute cited in its spirit as well as its letter. Section 7 of that act restricted to 10 per cent of the total volume the issue of silver certificates of denominations of $20, $50, and $100. This restriction has been complied with, and on June 30 those denominations were only a trifle over 9 per cent of that volume; by November 1 this percentage was reduced to 8. The purpose of the restriction is so beneficent that the process has been carried further, and no silver certificates of $10 are for the present issued. This policy enables the Department to use the whole volume of silver certificates in denominations of $5 and under as the larger ones are redeemed. As redemptions of United States notes are made this class of paper is confined to denominations of $10.

Certificates of $20 and upward are issued in abundance against gold in the Treasury.

The scarcity of small denominations which formerly prevailed and called forth natural complaints is thus fully remedied. By foresight and generous aid by Congress a fair reserve of such currency has been printed, sealed, and prepared for issue. Silver certificates of $5 and under and United States notes of $10 can be furnished either for like currency or for gold or silver, and coin of either metal will be paid for any forms of money of the Government in reasonable amounts.

In previous years, for small notes, deposits in kind were required, and standard dollars could be paid only for silver certificates. This last condition can be waived now only to the extent of standard dollars in the Treasury; that will, however, quite certainly meet current demands. But the silver dollars invariably command gold when that is called for.

Gold in either of its forms is taken and given for any other forms of currency; so is silver. For deposits for transfer of funds, for moving the crops, or other business, no question is asked about the kinds of money. But such deposits are received only at points where the Treasury has use for funds, and expenses for transfer are paid by the recipient.

The inflow of gold, permitting the free issue of gold certificates of $20 and upward, is the key to this maintenance of parity and interchangeability of all kinds of Government money. On the other hand, small denominations, including silver coin, are constantly in demand for the myriad transactions of retail trade and the current uses of rural communities, as well as for pay rolls in furnaces and factories and harvest fields. The Treasury in recent years has heard much more clamor for silver and small notes than for gold. It is now abundantly able to meet all calls for every kind of money for its own obligations, for redemption, and for legitimate transfers.

As a result of the movements which have been noted, our Government paper currency is gaining in simplicity. Gradually all large denominations are becoming gold certificates, and the smallest ones silver certificates, while in time all $10 will be United States notes. The advantage is obvious.

REDEMPTIONS AND EXCHANGES.

The receipts of all kinds of money for redemption and exchange during the past fiscal year amounted to $723,275,246, an increase of $54,804,865 over the preceding year. Gold coin and certificates were freely used in making payments therefor, as $66,499,827 more was paid over the counter than received, and if to this amount should be added the gold paid for transfer checks, given for national bank notes redeemed, the excess of payments would be carried to more than $90,000,000.

The kinds of money received and paid at Treasury offices on account of redemptions and exchanges during the fiscal year 1902 were as follows, viz:

RECEIPTS.

Kinds of money received by Treasury offices:	
Gold coin and certificates	$183,844,873
Silver coin and certificates	298,925,361
United States notes and Treasury notes	98,235,643
National-bank notes and minor coin	142,269,369
Total	723,275,246

PAYMENTS.

Account.	Kind of money paid by Treasury offices.					
	Transfer checks.	Gold coin and certificates.	Silver coin and certificates.	United States notes.	National-bank notes and minor coin.	Total.
For gold coin and certificates		$163,394,483	$13,563,210	$5,238,430	$1,628,688	$183,824,811
For silver coin and certificates	$149,603	64,088,662	209,101,935	23,360,566	2,356,605	299,057,369
For United States notes and Treasury notes		18,757,180	18,118,503	60,252,121	997,113	98,124,917
For national-bank notes and minor coin	61,891,589	4,104,375	63,832,289	11,819,287	620,609	142,268,149
Total	62,041,192	250,344,700	304,615,937	100,670,404	5,603,013	723,275,246

REDEMPTION OF NATIONAL-BANK NOTES.

National-bank notes to the amount of $171,869,258 were presented for redemption during the year, a sum equal to 47.98 per cent of the average amount of notes outstanding, and an amount $24,382,681 larger than was presented in the previous year, although the net increase in the volume of notes outstanding was only $2,929,991. Of the average amount of $5 notes outstanding there was 53.60 per cent redeemed; of the $10 notes, 43.46 per cent; of the $20 notes, 43.80 per cent; of the $50 notes, 54.22 per cent; and of the $100 notes, 65.51 per cent. Comparison of these percentages with those of the previous fiscal year shows an increase of 7.29 per cent in the $5 notes redeemed, of 3.82 per cent in $10 notes, of 0.42 per cent in $20 notes, of 8.91 per cent in $50 notes, and of 13.03 per cent in $100 notes. The increase in the aggregate redemptions was only 4.59 per cent. During the year the amount of $5 notes outstanding was reduced $6,948,635, the $50 notes, $327,400, and the $100 notes, $156,100; while the $10 and $20 notes were increased $4,089,750 and $6,275,420, respectively.

There was a net increase of 368 banks, 437 new charters having been granted and 69 old charters surrendered during the year. The total number of charters granted to June 30, 1902, was 6,325. The number of banks in existence at that date was 4,546, leaving 1,779 as the number out of existence. Between March 14, 1900, and June 30, 1902, there was a net increase of 929 in the number of banks and $102,269,361 in the amount of circulating notes outstanding, the total amount of notes on the latter date being $356,672,091.

Of the notes redeemed there was $167,035,539.50 assorted. Those fit for use, delivered to the banks of issue, amounted to $57,303,520, while there was delivered to the Comptroller of the Currency $89,646,745 for reissue to the banks and $20,085,274.50 for retirement. The assorted notes fit for use were $365,195 less than the amount delivered in the previous year, but there was $19,673,349.50 more delivered to the Comptroller, making a net increase of $19,308,154.50 in the amount assorted and delivered.

In payment of notes presented for redemption, there were $74,811,828.26 in United States currency forwarded from Washington, checks to the amount of $61,870,406.50 drawn on the various subtreasuries, $34,319,129.80 credited in accounts, and $46,770.80 forwarded in silver.

The deposits for the retirement of circulation amounted to $33,546,320. Noteworthy during the year were the deposits for the purpose of withdrawing bonds under the act of June 20, 1874, to which there is a legal limit of $3,000,000 per month. The limit for November was taken up early in that month and applications to deposit were then received for December, and continued to be received in advance for each month following until May, when they ceased. These deposits seem to have been made to realize from sale of the bonds the high premiums they bore.

The expenses incurred during the year were $153,796.33, and the assessment upon the several national banks was made at the rate of $0.92444 per $1,000 of their circulating notes redeemed.

In the first quarter of the fiscal year 1903 the notes presented for redemption amounted to $39,791,201, and those assorted and delivered to $35,591,645. Compared with the figures for the corresponding period of the preceding year, there was an increase of $3,283,510 in the amount presented for redemption and $1,760,752 in the amount assorted and delivered. The volume of bank notes outstanding, which was increased $10,321,597 during the quarter, reached the sum of $366,993,598 on September 30, and a net increase of 105 in the number of existing banks made a total of 4,651.

MOVEMENT OF STANDARD DOLLARS.

The shipments of standard silver dollars in the fiscal year 1902 exceeded those of any like period on record. They were $40,404,325, or 5.4 per cent greater than in 1901. The rate per $1,000 for transportation was $1.99 in the past fiscal year against $2.12 in the one before. (Table 60, p. 132.)

By months the movement was:

	1901.	1902.	1903.
July	$2,231,763	$2,678,935	$2,965,341
August	3,573,034	3,936,861	4,348,315
September	6,669,105	6,094,118	6,829,396
First quarter	12,473,902	12,709,914	14,143,052
October	6,523,447	6,882,795	
November	3,637,964	3,918,941	
December	3,404,412	3,626,259	
January	1,410,585	1,787,443	
February	1,913,060	1,790,542	
March	2,079,102	2,234,217	
April	2,145,890	2,273,471	
May	2,367,562	2,406,891	
June	2,382,595	2,773,852	
Total	38,338,519	40,404,325	

EXCHANGE OF STANDARD DOLLARS.

The standard silver dollars presented at the Treasury offices for exchange show an increase of 8.5 per cent in the past fiscal year over the preceding twelve months. The exchanges exceeded the shipments in 1901 by $1,386,402, and in 1902 by $2,710,690.

The details are for two fiscal years and the first quarter of 1903:

Offices.	Fiscal year— 1901.	1902.	1903, first quarter.
Washington	$1,426,198	$1,263,986	$251,977
Baltimore	1,[illegible]	1,[illegible]	[illegible]
New York	5,893,702	5,614,360	1,254,580
Philadelphia	2,861,726	2,825,399	760,506
Boston	1,623,430	3,792,110	414,910
Cincinnati	3,306,530	3,644,790	904,600
Chicago	8,705,483	8,638,055	2,095,143
St. Louis	7,844,709	8,138,248	1,480,865
New Orleans	3,710,190	4,372,150	790,000
San Francisco	2,721,553	3,329,627	424,373
Total	39,724,921	43,115,015	8,663,414

MOVEMENT OF SUBSIDIARY COINS.

The movement of subsidiary silver in 1902 exceeded by $796,812.50 that of the year before. The amount in circulation arose to $85,721,228, which was $6,486,014 more than twelve months earlier. In addition to these shipments, payments of subsidiary silver for various purposes during the year amounted to more than $23,500,000.

By months the shipments were:

	1901.	1902.	1903.
July	$1,547,118.80	$1,810,156.40	$1,944,552.60
August	2,085,455.90	2,173,351.20	2,556,549.60
September	2,865,477.70	2,682,992.90	3,349,324.70
First quarter	6,498,052.40	6,666,500.50	7,850,426.90
October	2,663,718.10	2,771,233.85	
November	2,008,356.90	2,086,705.10	
December	2,252,147.70	1,[illegible]	
January	782,015.10	871,[illegible]	
February	1,052,911.60	1,009,[illegible]	
March	1,187,533.40	1,384,847.15	
April	1,357,994.50	1,555,544.60	
May	1,555,369.60	1,696,[illegible]	
June	1,717,047.55	1,913,[illegible]	
Total	21,075,145.85	21,871,959.35	

REDEMPTION OF SUBSIDIARY COINS.

The subsidiary coins presented for redemption show an increase of 4.6 per cent as compared with the fiscal year 1901. It will be noted that the redemptions were greater than the shipments by $16,193,738.15 in 1901, and by $17,139,670.65 in 1902.

The statement by offices follows:

Offices.	Fiscal year— 1901.	1902.	1903, first quarter.
Washington	$1,892,687	$1,740,158	$346,321
Baltimore	2,330,380	2,382,870	565,660
New York	15,150,184	16,084,303	3,744,466
Philadelphia	4,884,326	4,978,954	1,316,301
Boston	1,308,110	1,517,730	351,560
Cincinnati	1,600,049	1,767,705	467,460
Chicago	4,285,076	4,292,828	997,226
St. Louis	2,950,635	3,483,381	724,381
New Orleans	1,191,090	1,009,060	229,460
San Francisco	1,676,348	1,754,641	394,319
Total	37,268,885	39,011,630	9,137,154

MINOR COINS.

The activity of the mint in minor coins during 1902 is illustrated by the figures kindly furnished by the Mint Bureau of the coinage and remelting during that period, and of the amount outstanding on June 30. By comparison with 1901 it appears that the amount coined in the latter year was $2,439,736.17 greater than in the one before, and that remelted $1,097,089.69 greater, while the amount outstanding increased $1,342,646.48.

The details follow:

Denomination.	Fiscal year 1901.		
	Coined.	Remelted.	Outstanding June 30, 1901.
Copper cents	$1,562,887.44	$379,357.97	$1,183,529.47
Copper half cents	39,926.11		39,926.11
Copper nickel cents	2,007,720.00	795,733.11	1,211,986.89
Bronze cents	10,727,871.02	136,888.14	10,590,982.88
Bronze 2 cents	912,020.00	337,378.72	574,641.28
Nickel 3 cents	905,768.52	276,602.86	629,165.66
Nickel 5 cents	19,335,403.75	629,165.66	18,706,238.09
Total	35,491,596.84	2,555,126.46	32,936,470.38

Denomination.	Fiscal year 1902.		
	Coined.	Remelted.	Outstanding June 30, 1902.
Copper cents	$1,562,887.44	$379,540.51	$1,183,346.93
Copper half cents	39,926.11		39,926.11
Copper nickel cents	2,007,720.00	797,168.61	1,210,551.39
Bronze cents	11,602,668.24	160,249.35	11,442,418.89
Bronze 2 cents	912,020.00	337,671.72	574,348.28
Nickel 3 cents	905,768.52	277,846.36	627,922.16
Nickel 5 cents	20,900,342.70	1,699,739.60	19,200,603.10
Total	37,931,333.01	3,652,216.15	34,279,116.86

MOVEMENT OF MINOR COINS.

In comparing the shipments of minor coins for the past two years, we find in the latter an increase of $714.57, while there was a reduction in the cost of transportation of $600.27.

The charge against the Philadelphia office covers the expense of transfers from that point to supply other offices. The business by offices is thus reported:

Office.	Fiscal year 1901.		Fiscal year 1902.	
	Amount.	Expense of transportation.	Amount.	Expense of transportation.
Washington	$19,731.96	$282.37	$17,519.40	$239.20
Baltimore	16,455.00	197.05	22,605.00	256.60
Boston	67,040.00	670.65	106,340.00	1,063.50
Chicago	36,466.59	546.39	3,911.17	1,061.24
Cincinnati	61,500.00	624.30	103,535.00	1,047.55
New Orleans	73,620.00	1,087.90	75,135.00	944.85
New York	245,910.00	3,169.10	189,285.00	2,953.35
Philadelphia	31,165.00	3,252.15	405.00	4,864.25
San Francisco	42,105.00	534.05	69,855.00	869.56
St. Louis	208,775.00	3,708.72	223,275.30	4,009.40
Mint, Philadelphia	2,151,210.92	44,059.10	2,142,798.17	40,222.01
Total	2,953,979.47	58,131.78	2,954,694.04	57,531.51

Office.	First quarter of 1902.		First quarter of 1903.	
	Amount.	Expense of transportation.	Amount.	Expense of transportation.
Washington	$6,700.00	$89.20	$10,525.00	$179.70
Baltimore	6,790.00	75.15	10,365.00	134.05
Boston	32,055.00	320.65	37,195.00	372.45
Chicago	250.00	5.75	1,495.00	37.55
Cincinnati	25,295.00	261.15	31,150.00	316.00
New Orleans	21,035.00	304.65	41,665.00	442.40
New York	65,855.00	708.80	81,875.00	730.30
Philadelphia	220.00	2,602.40	100.00	1.00
San Francisco	19,935.00	239.91	32,175.00	398.70
St. Louis	73,900.35	1,430.55	84,550.00	1,414.30
Mint, Philadelphia	465,900.00	9,182.22	508,525.00	10,367.12
Total	717,935.35	15,220.43	839,620.00	14,393.57

REDEMPTION OF MINOR COINS.

The minor coins redeemed during the year show an increase of 9.9 per cent over the preceding twelve months.

The details follow:

Office.	Fiscal year—		
	1901.	1902.	1903, first quarter.
Washington	$219,529	$232,902	$56,852
Baltimore	517,790	570,270	161,850
New York	1,883,383	1,994,805	471,970
Philadelphia	585,742	621,757	152,476
Boston	120,170	171,150	58,560
Cincinnati	225,530	266,547	69,902
Chicago	312,044	379,872	85,791
St. Louis	243,864	268,498	46,940
New Orleans	30,240	48,459	12,120
San Francisco	21,957	21,298	7,213
Total	4,160,249	4,575,558	1,123,674

RECOINAGE IN THE FISCAL YEAR.

The worn gold coins sent to the mint for renewal were worth a little less than twice as much in 1902 as in 1901. The worn silver coins were worth $494,303.94 less in the later than the earlier year. The increase in minor pieces recoined was $98,033.

GOLD, SILVER, AND MINOR COINS RECOINED IN THE FISCAL YEARS 1901 AND 1902.

Denomination.	1901.		1902.	
	Face value.	Loss.	Face value.	Loss.
Double eagles	$167,420.00		$312,980.00	
Eagles	79,930.00		160,900.00	
Half eagles	159,035.00		319,765.00	
Quarter eagles	6,592.50		9,797.50	
Three-dollar pieces	180.00		27.00	
One-dollar pieces	109.00		96.00	
Total gold	413,326.50	$3,257.48	803,565.50	$6,259.08
Half dollars	1,724,528.00		1,487,489.00	
Quarter dollars	1,273,399.75		1,075,397.00	
Twenty-cent pieces	92.60		215.40	
Dimes	827,959.70		768,981.10	
Half dimes	1,579.65		1,301.55	
Three-cent pieces	181.30		52.71	
Total silver	3,827,741.00	219,296.09	3,333,437.06	191,889.62
Minor coin	96,007.75		194,040.75	
Aggregate	4,337,075.25	222,553.57	4,331,043.36	198,148.10

SPURIOUS ISSUES DETECTED IN 1902.

The counterfeit coins and paper currency detected at the Treasury during the past fiscal year were $759.50 less in face value than in the twelve months preceding. There was a falling off in all kinds except in United States notes and national-bank notes. The items are:

Denomination.	Fractional currency.	Silver coins.	United States notes.	Treasury notes of 1890.	National-bank notes.	Silver certificates.	Total.
Ten cents	$0.20	$485.60					$485.80
Fifteen cents	.60						.60
Twenty-five cents	11.00	1,281.25					1,292.25
Fifty cents	175.00	1,551.00					1,726.00
One dollar		1,803.00	$18.00			$6.00	1,822.00
Two dollars			24.00	$10.00	$36.00	132.00	202.00
Five dollars			260.00	20.00	355.00	130.00	765.00
Ten dollars			380.00	10.00	570.00	550.00	1,510.00
Twenty dollars			560.00		360.00		920.00
Fifty dollars			750.00		50.00		800.00
One hundred dollars			800.00		500.00		1,300.00
Total	186.80	5,120.85	2,787.00	40.00	1,871.00	818.00	10,823.65

The total number of 1-cent pieces thrown out during the year was 96,995. In 1901 the total was 163,918. The number of 5-cent nickel pieces was 2,596, as compared with 3,333 in the previous year. Eleven counterfeit gold coins and three compound-interest notes were rejected at this office.

TRUST FUNDS, CENTRAL PACIFIC RAILROAD.

Since July 30, 1901, the date of the last statement by the Treasurer on the subject, two payments have been made on the notes of the Central Pacific Railroad Company held by the Department. These were on February 1, 1902, $222,552.49, and on July 31, 1902, $918,744.93, a total of $1,141,297.42. Bonds of the company, held as collateral, were released at the time of each payment.

The balance of the notes held by the Treasury, yet to become due, was on August 1, 1902, $38,228,265.14, secured by first mortgage bonds of the company for $38,229,000.

SPECIAL TRUST FUNDS.

Of bonds of several of the States held by the Treasurer as custodian under an act approved August 15, 1894, payment was made by the State of Florida for $132,000, and on August 8, 1902, bonds of that State for like amount were forwarded to the governor of Florida.

No other changes have taken place in the special trust funds, and they stand:

Louisiana State bonds	$37,000.00
North Carolina State bonds	58,000.00
Tennessee State bonds	335,666.66⅔
Virginia State bonds	581,800.00
Chesapeake and Ohio Canal bonds, guaranteed by Virginia	13,000.00
South Carolina State stocks	125,000.00
Total	1,150,466.66⅔

United States bonds are held by the Treasurer, under specific provisions of law, as follows:

American Printing House for the Blind, 4 per cent	$250,000
Manhattan Savings Institution, 4 per cent	75,000
North American Commercial Company, 2 per cent	50,000
Total	375,000
Captured bonds of the State of Louisiana, held for the Secretary of War	545,480

DISTRICT OF COLUMBIA.

The transactions of the Treasurer of the United States, ex officio commissioner of the sinking fund of the District of Columbia, pertaining to the affairs of the District, are fully set forth in a separate report.

The net reduction of the bonded debt during the year was $871,800, and of the annual interest charge, $43,235.70. The bonds retired consisted of 7 per cent water-stock bonds for $319,000, which were due October 1, 1901, and by purchase, 6 per cent thirty-year funding bonds for $31,000, and 3.65 per cent bonds for $521,800.

From July 1, 1878, to the close of the fiscal year 1902 the bonded debt was increased by the issue of 3.65 per cent bonds for $1,226,050, and decreased by the operations of the sinking funds and otherwise $9,136,150, making a net reduction of $7,910,100, and of the annual interest charge, $485,402.60. The total amount of the bonded debt outstanding June 30, 1902, was $14,196,550. Of this sum $13,683,850 consists of 3.65 per cent bonds. The Treasurer purchased these bonds during the year at a rate that netted the sinking fund nearly 2.25 per cent per annum. In view of the difficulty of purchasing these bonds at prices advantageous to the fund, the question arises whether the Treasurer might not be authorized to buy United States securities instead.

Since the close of the fiscal year the debt has been reduced by the purchase of 3.65 per cent bonds for $202,800 and 6 per cent thirty-year funding bonds for $4,100. The balance of these 6 per cent bonds outstanding, amounting to $494,500, will be payable November 1, 1902, and will be retired by the sinking fund.

At the close of the fiscal year 1902 the 10 per cent guaranty fund held for account of District contractors amounted to $332,764.52, and was credited to 115 separate contracts. Of this sum $317,986.95 is invested in bonds purchased at the request and risk of contractors.

The receipts for account of the police relief fund during the year were $46,532.63, and for account of the firemen's relief fund $16,978.23. These sums were deposited in the Treasury in monthly installments, subject to the requisition of the District Commissioners.

The securities of the District in the care and custody of the Treasurer are:

3.65 per cent bonds (unsigned)	$7,723,450
Bonds for account of District contractors	279,580
Chesapeake and Ohio canal bonds	84,285
Total	8,087,315

THE WORK OF THE TREASURER'S OFFICE.

In nearly every branch the business of the Treasurer's office has grown greatly during the fiscal year. The number of letters received and sent is an index of the increase of work, as is the value of registered letters received, which has advanced by $9,699,377.61. This is the record for 1902:

LETTERS RECEIVED.

Letters received by open mail	174,961
Letters received by registered mail	24,236
Letters received containing bonds, currency, etc.	12,156
Letters referred to other bureaus	8,446
Letters briefed and recorded	28,793

LETTERS SENT AND SIGNATURES ATTACHED.

Letters sent by open mail	267,318
Interest checks mailed	234,219
Value of interest checks mailed	$23,530,395.64
Letters sent by registered mail	14,982
Letters and forms bearing autograph signatures	24,236
Autograph signatures to warrants, transfers, checks, requisitions, receipts, and bonds	397,607
Forms bearing printed signatures, etc., mailed	276,480
Printed notices mailed	238,863
Value of registered letters sent	$7,694,588.99
Value of registered letters received	$23,601,373.63
Signatures of Treasurer United States, account sinking fund, office District of Columbia	2,015
Blank checks issued to disbursing officers	71,405

The vast expansion of the labor of the office has tested the capacity, the fidelity, and efficiency of the staff, the chiefs of divisions, the clerks, and of every person employed. They have met well every requirement. The volume of work done has been large and its excellence notable. Recognition and commendation have been well earned and are cordially extended.

Respectfully,

ELLIS H. ROBERTS,
Treasurer of the United States.

Hon. LESLIE M. SHAW,
Secretary of the Treasury.

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REPORT OF THE DIRECTOR OF THE MINT.

TREASURY DEPARTMENT,
BUREAU OF THE MINT,
Washington, D. C., November 29, 1902.

SIR: I have the honor herewith to submit the twenty-ninth annual report of the Director of the Mint, covering the operations of the mints and assay offices of the United States for the fiscal year ending June 30, 1902, with such available statistics for the fiscal year as may be valuable in connection therewith.

OPERATIONS, EARNINGS, AND EXPENDITURES.

The coinage mints at Philadelphia, New Orleans and San Francisco were in operation throughout the fiscal year. In number of pieces the coinage of the year has never been exceeded, aggregating 191,419,506, but in value it falls from $136,340,781.58 in the previous year to $94,526,678.12, this being due, of course, to the greater demand for the small denominations. Gold coinage dropped from $99,065,715 to $61,980,572.50, but gold bullion accumulated in the mints, increasing the stock on hand from $100,219,493 to $124,083,712. The coinage of silver dollars amounted to $19,402,800, subsidiary silver coins to $10,713,569.45 and minor coins to $2,429,736.17.

The coinage of silver dollars during the year was wholly from bullion purchased under the act of July 14, 1890. The amount of bullion on hand July 1, 1901, was 52,562,921.90 fine ounces, and at the close of the year's operations, June 30, 1902, 33,218,712 fine ounces. By the monetary act of March 14, 1900, authority was given to use this bullion for subsidiary coinage, provided that the total stock of subsidiary

coins in the country should not at any time exceed $100,000,000, and 4,337,356.50 ounces were used for that purpose during the year.

The original gold deposits of the year amounted to $132,580,829.88. Gold bars taken for export amounted to $36,332,678.53, and for domestic consumption, $14,482,578.08. The gross expenditures on account of the mint service, including loss by wastage in operating upon the metals, was $1,910,503.91. The earnings from all charges and incidental gains, exclusive of seigniorage, aggregated $357,568.62. The seigniorage realized in the manufacture of 1 and 5 cent pieces amounted to $1,919,370.25, and the total seigniorage accruing upon the silver, nickel, and bronze coins made in the year was $11,013,856.11, which was turned into the general fund of the Treasury.

The following table shows the number of employees and the earnings and expenditures of the several offices and institutions of the mint service, including the Bureau or administrative office in Washington:

Number employed, earnings and expenditures of the Mint service for the calendar year ended June 30, 1902.

Institutions.	Number employed.	Earnings.	Expenditures.
Bureau of the Mint	17	$539.34	[a] $101,305.83
Philadelphia Mint	636	[b] 6,488,034.26	[c] 916,719.50
San Francisco Mint	213	[b] 801,869.35	326,825.50
New Orleans Mint	225	[b] 3,892,971.75	259,158.98
ASSAY OFFICES.			
New York	69	119,445.86	181,507.85
Carson	8	1,292.33	12,812.75
Denver	25	26,526.18	[d] 44,217.48
Helena	13	4,535.69	25,158.87
Boise	9	5,746.27	13,620.49
Charlotte	5	1,302.28	4,746.70
St. Louis	3	1,243.33	4,369.77
Deadwood	5	1,346.99	8,706.64
Seattle	33	27,488.37	46,000.00
Total	1,261	11,372,342.00	1,945,150.36

[a] Includes $66,964.01 freight on bullion and coin between mints and assay offices.
[b] Includes seigniorage resulting from coinage operations.
[c] Includes $191,864.61 for new equipment.
[d] Includes $1,790.73 for new equipment.

The cost of transferring coin and bullion between mints and assay offices may also properly be included in expenditures on account of the mint service, although paid from another appropriation. This item amounted during the year to $66,964.01.

The details of the operations of the several institutions will be found elsewhere under the respective headings.

COINAGE CAPACITY, IMPROVEMENTS IN EQUIPMENT, ETC.

Coinage operations in Philadelphia were transferred from the old to the new mint structure in October, 1901. The work of that institution was necessarily somewhat interrupted and disarranged by the removal and by the change to new machinery and new methods then introduced. When the full results of all the changes that have been inaugurated are secured it is believed that a large gain in economy and efficiency will be realized. The capacity of the new mint is more than double that of the old, and this increase in the output can be had, when required, at slight additional cost over the operating expenses heretofore. Every effort has been made to introduce into this mint the

most approved methods that have been developed in the art of coinage and to obtain an equipment that would give the best results.

Gas has been adopted as the only fuel for the melting, annealing, and hardening processes, and the supply is manufactured in the mint from naphtha at a cost approximating 50 cents per 1,000 feet. The chief consideration in the use of gas is the complete control that is possible in the application of heat and the more accurate results that are obtained. Since the new rolling machinery and the new method of annealing by gas has been in use the percentage of good planchets to the total number cut has risen to about 90. There are no draw benches in the new mint and the adjusting of silver blanks has entirely ceased.

The transmission of power is by electricity, each machine being equipped with a motor, except in a few cases where the power required is very light.

The appropriations for the new Philadelphia structure aggregate $2,025,000. The expenditures for equipment to January 1, 1902, amounted to $349,720.84.

Nothing in the way of new machinery had been placed in the mint at San Francisco for many years, and the equipment was much worn and in many particulars out of date. The successful inauguration of new methods at Philadelphia naturally suggested improvements in the other institutions, and contracts aggregating about $75,000 have been made for that purpose at San Francisco. The capacity of this mint will thus be largely increased with little or no increase in the cost of operations. Gas will be substituted for other fuels and electricity directly applied to all machinery.

The mint at Denver was authorized by act of Congress April 21, 1862, and the private coinage establishment of Clark, Gruber & Co., including real estate, was purchased at a cost of $37,500. No coinage has ever been executed there by the Government, the institution being conducted simply as an assay office and its receipts shipped to the Philadelphia mint for coinage. By act of Congress, approved February 20, 1895, the new mint at Denver was provided for, and an appropriation of $500,000 for building and site was made. At the first session of the Fifty-seventh Congress an additional appropriation of $300,000 was made for completing the building and constructing vaults. The contract for the superstructure has been completed and the contract for interior construction has been let. An appropriation of $25,000 for equipment has been made and contracts for equipment to the amount of $150,000 have been authorized. Further action to provide for equipment should now be taken, in order that the machinery may be ready when the building is finished. The amount required for this purpose will depend upon the action taken upon the recommendation relative to the discontinuance of coinage operations at New Orleans.

THE NEW ORLEANS MINT.

The increased capacity of the mints at Philadelphia and San Francisco and the prospective opening of the new mint at Denver have provided and will provide a much greater coinage capacity than the country has heretofore had. On the other hand, the pressure upon the mints will relax rather than increase. The coinage of 1,500,000 silver dollars per month, now required by law, will soon come to an end by the exhaustion of the stock of bullion purchased under the act

of July 14, 1890. This requirement now calls for a coinage equal to the entire capacity of the New Orleans mint. When it ceases, that mint will be idle unless work is diminished at Philadelphia and San Francisco to give it employment. When the Denver mint is opened, the bullion output of Colorado and possibly of other mining districts of the West now going to Philadelphia will be cut off from the latter institution, and it does not seem advisable to still further reduce its operations in order to supply work for New Orleans. The operations of the San Francisco mint are wholly confined to gold produced or imported on the Pacific coast and the manufacture of the subsidiary coins required in the Pacific coast States, and it is not practicable to divide its work with the mint at New Orleans.

The latter institution was reopened after the civil war in 1879, and since then has been almost wholly employed upon the coinage of silver. Its receipts of gold are small—last year about $400,000—and alone do not warrant coinage operations. It would be a useless and unjustifiable expense to ship gold bullion from Denver, Philadelphia, or any other of the offices of the service, to New Orleans for coinage, as the Treasury would have no use for the coin there.

It is opportune here to call attention to the fact that the gold coinage of the country is now entering almost entirely into storage and that the cost of coinage is an unnecessary expense. The Treasury holds now about $500,000,000 of coined gold, which is doubtless more than will be called for in a generation to come. Practically all of the current coinage is being deposited in the Treasury for certificates. When gold is required for export, it is wanted in bars, while for domestic circulation the public prefers the Treasury certificates, which, with some modification of the statutes, might as well be issued against bars.

The balance of silver bullion purchased under the act of 1890, in the Treasury July 1, 1902, was 33,218,712 fine ounces. The amount of this bullion used in last year's coinage operations was 19,344,209 ounces, so that if the same amount is used in the current fiscal year the amount remaining on July 1, 1903, will be only 13,874,903 ounces, which is not enough to allow of a full year's coinage for all the mints in 1903–04. This bullion is all at Philadelphia, and, inasmuch as that mint can easily meet all requirements, it is not considered advisable to ship any bullion from there to New Orleans after July 1 next, or to plan for coinage operations at the latter place after that date.

The cost of operating the New Orleans mint last year was $259,158.98. The estimates for Philadelphia and San Francisco are not increased, but it will be possible for those institutions to do the entire coinage for the year 1903–4 within the appropriations that are asked for them. On the other hand, if the work to be done is divided between the three mints, it will not be possible to make any considerable reduction in expenditures, as a complete organization of skilled employees must be kept at each establishment.

If coinage operations are now discontinued at New Orleans, so much of the machinery there as is in good condition and of approved design can be transferred to the new Denver mint, and the estimates for equipment there correspondingly reduced.

If the New Orleans institution is abolished, the country will be left with three coinage mints—one on the Pacific coast, which will be the natural depository of the gold product of Alaska and the Pacific coast States and of the imports from Australia and the Orient; one in the

interior, convenient to the gold producers of the Rocky Mountain region; and one near the eastern coast, convenient to receive the imports from that direction. This may be accepted as a satisfactory permanent arangement.

The work of coinage in view of the importance of absolute uniformity, the value of the material worked upon, and constant risk of loss, and other considerations realized in practical operations, can be more economically and satisfactorily done in three mints than divided among a larger number. Coinage is monopolized by the Government, and the skilled workmen required are not picked up in the open market. They are trained in the mint service, and must not only be skilled in the mechanical operations, but trustworthy in character. It is impracticable to run the mints intermittently, dismissing the employees and engaging a new force when ready to start again. The workmen must be picked and trained, and given regular employment.

The character of the work favors its concentration in a few establishments, because a certain organization is required, no matter how small the institution may be. A division of labor and a system of checks must be maintained to guarantee certain accounting for the precious metals handled. An organization planned to do this properly can conduct operations large enough to keep itself busy for scarcely more than is required to do a less amount of work.

In view of these facts and looking to the permanent establishment of the service on the basis of three mints, located at Philadelphia, Denver, and San Francisco, it is recommended that coinage operations be discontinued at New Orleans at the close of the current fiscal year, and that the institution there be hereafter conducted as an assay office.

SUBSIDIARY COINAGE.

The report of this Bureau one year ago directed attention to the necessity for legislation at an early day to authorize an increase in the country's stock of subsidiary coin. This need has become imperative, for unless Congress takes action to this end at its present session the Treasury will soon be unable to meet the demand for the fractional pieces. The monetary act of March 14, 1900, limits the total stock of these coins in the country at any one time to $100,000,000, and that limit has been reached. Coinage has ceased, and the Treasury is wholly dependent upon the stock now on hand to supply the public needs. On October 1, 1901, the stock in the country was $90,613,512, of which $10,520,157 was in the Treasury. On October 1, 1902, the stock in the country was $100,000,000, of which $10,750,477 was in the Treasury. The latter amount is no more than should be in the Treasury at all times, as it includes all denominations, and it is divided between the Treasury at Washington and the 9 subtreasuries.

No good reason appears for limiting the issue of subsidiary silver coins. They are not a legal tender and can not be forced into circulation in excess of the wants of trade. They are redeemable at any office of the Treasury and can not be kept in circulation in excess of the wants of trade. The outflow and return are entirely automatic. The public knows when it wants change and should be supplied without restriction. The coinage acts of the period before the civil war contained no limit upon the supply of these denominations. The act of 1853, which reduced the fractional pieces to token money, did not restrict their issue. The first appearance of the limit upon the fractional denominations was in the act of June 30, 1864, authorizing the

issue $50,000,000 in fractional paper currency. This naturally followed from the fact that all issues of paper money were in fixed amounts and the fractional currency was not redeemable in coin. In providing for the resumption of specie payments and the substitution of fractional silver for fractional paper currency, Congress followed in part the language of the act authorizing the paper currency, and this restricted the total amount of coin and paper to $50,000,000. The act of March 14, 1900, raised this limit to $100,000,000, and it should now be raised again or abolished entirely.

The stock of silver bullion purchased under the act of July 14, 1890, remaining in the Treasury at the close of the last fiscal year, was 33,218,712 fine ounces, and this amount has since been reduced by the required coinage of 1,500,000 silver dollars monthly. The act of March 14, 1900, authorized the use of this bullion for subsidiary coins, subject to the $100,000,000 limit put upon the latter. I beg to repeat my recommendation of a year ago that the provision of law which requires the coinage of 1,500,000 of silver dollars per month be repealed and that the balance of this bullion be held for subsidiary coinage. All that remains will be needed for this purpose within two or three years and there is no advantage in pursuing the dollar coinage further. Nobody is advocating further purchases of silver for dollar coinage. The policy under which the present stock of bullion was acquired has been definitely abandoned and if the present stock were not on hand it would not now be purchased for that purpose.

MINOR COINAGE AT ALL MINTS.

Under the provisions of section 3528 of the Revised Statutes of the United States, the manufacture of all the minor coins is restricted to the mint at Philadelphia. At the time this provision was enacted the demand for such coins was confined principally to the Eastern, Middle, and Western States, east of the Missouri River, but in recent years there has been a very heavy increase, which has extended not only to the section named, but to the Southwestern States and the Pacific coast as well.

No reason is apparent why the other Government mints should not be utilized for the making of minor coin when it suits the convenience of the Treasury to so employ them, and it is recommended that such authority be granted.

DEFICIENCIES IN THE BULLION ACCOUNTS OF THE MINTS.

In the reports of the Bureau of the Mint for the fiscal years 1898 and 1899 attention was invited to the deficiencies existing in the bullion accounts of the mints at San Francisco, Philadelphia, New Orleans, and Carson, Nev., aggregating $530,681.67.

The items going to make up this sum are not only carried in the accounts of the mints named, but also in the accounts of the Treasurer of the United States as unavailable assets. There is very little prospect of any part of these sums ever being recovered by the Government, and they should not be carried in the accounts year in and year out as a part of the assets of the Government, as they go to make up a total that is incorrect. The recommendation made in the fiscal reports for 1898 and 1899, that Congress be asked to relieve the accounts of the Treasurer of the United States and the respective mints from carrying the amount of these deficits in their accounts, is again renewed.

MINOR COINAGE METAL FUND.

Section 3528, Revised Statutes of the United States, provides that "for the purchase of metal for the minor coinage a sum not exceeding fifty thousand dollars in lawful money of the United States shall be transferred by the Secretary of the Treasury to the credit of the superintendent of the mint at Philadelphia, at which establishment only, until otherwise provided by law, such coinage shall be carried on."

The sum provided above, $50,000, is now insufficient to carry the stock of materials required to enable the mint to promptly meet the greatly increased demand for minor coin. When this fund was created by the act of February 28, 1873, it was ample, the total minor coinage for the year being $369,380; but last year the minor coinage amounted to $2,009,568, and in the month of December alone to over $300,000. The fund is inadequate to handle this volume of business, and no little inconvenience is experienced in consequence. The minor coinage metal fund should be increased to $250,000 as a maximum, and it is respectfully recommended that Congress be again asked to take this action.

DEPOSITS OF GOLD BULLION, FISCAL YEAR 1902.

The deposits of gold bullion at the mints and assay offices of the United States during the fiscal year ended June 30, 1902, exclusive of the redeposits, were of the value of $132,580,829.88, against $153,101,482.38, reported the previous year.

Deposits of bullion may be made at a mint or assay office for conversion into bars for the convenience of the depositor. When delivered to him and disposed of by him they frequently find their way to another one of the Government institutions, and are there classified as redeposits. The same applies to transfers of bullion between the mints and assay offices.

The aggregate of all deposits, including redeposits, is the total of metal operated upon in the year by the mint service. This total of gold bullion received in the fiscal year ended June 30, 1902, was 9,068,708.137 standard ounces, of the value of $168,720,141.15, against 10,789,428 standard ounces, of the value of $200,733,345.89, reported the previous year.

The deposits of domestic bullion amounted to 5,985,937.076 standard ounces, of which 1,230,004.009 standard ounces were in a crude condition direct from the miners operating in the various States; 906,813.297 standard ounces of refinery bars (less than 0.992 in fineness) and 2,949,119.770 standard ounces of refined bullion (0.992 in fineness and over) were bullion received from private refineries, chlorination and cyanide works.

UNCURRENT DOMESTIC GOLD COIN FOR RECOINAGE.

Uncurrent and mutilated domestic gold coin received for recoinage contained 80,004,087 standard ounces, of the coinage value in new coin of $1,488,448.16. Of this amount 37,148.867 standard ounces were received over the counter and 42,855.220 standard ounces were received on transfers from the Treasury.

The face value and denominations of the coin referred to is shown in the following table:

UNCURRENT DOMESTIC GOLD COIN.

Denomination.	Face value.		Total.
	Transferred from Treasury.	Purchased over counter.	
Double eagles	$312,980.00	$197,000.00	$509,980.00
Eagles	160,900.00	315,130.00	476,030.00
Half eagles	319,765.00	167,435.00	487,200.00
Three-dollar pieces	27.00	84.00	111.00
Quarter eagles	9,797.50	18,005.00	27,802.50
Dollars	96.00	373.00	469.00
Total	803,565.50	698,027.00	1,501,592.50
Loss by recoinage	6,259.08	6,885.23	13,144.31

Foreign bullion containing 977,681.296 standard ounces, of the value of $18,189,416.90, were also received, of which 944,375.084 standard ounces were unrefined, and 33,306.212 standard ounces were refined previous to its receipt, as shown by the following table:

DEPOSITS OF FOREIGN GOLD BULLION.

Country of production.	Unrefined.		Refined.	
	Standard ounces.	Coining value.	Standard ounces.	Coining value.
Canada:				
British Columbia	60,690.207	$1,129,120.13		
Klondike, Northwest Territory	577,655.039	10,747,070.49		
Nova Scotia	27,948.678	519,975.40		
Ontario and Quebec	18,520.004	344,558.21		
Mexico	172,292.564	3,205,440.55	7,295.300	$[illegible]
South America	56,398.061	1,049,266.25		
Central America	28,520.743	530,618.47		
West Indies	375.097	6,978.54		
Spanish Honduras	399.802	7,438.17		
China	21.109	392.72		
Philippine Islands	13.318	247.77		
New Zealand	1,490.423	27,728.80	25,101.912	465,598.26
Australia	1.963	36.52		
Dutch Guiana	37.543	698.47		
South Africa	10.583	195.96		
Total	944,375.084	17,569,706.45	33,306.212	619,650.45

Foreign gold coin containing 752,293.722 standard ounces, of the coining value in United States money of $13,996,162.21, was deposited. The following table shows the country of coinage and amount of such deposits.

DEPOSITS OF FOREIGN GOLD COIN.

Country of coinage.	Standard ounces.	Coining value.
Great Britain	537,252.349	$9,995,392.53
France	16,046.305	298,535.91
Mexico	34,148.970	635,329.67
Japan	72,301.068	1,345,136.14
Spain	54,559.481	1,015,060.10
Germany	229.910	4,277.39
Russia	1,887.716	35,120.29
New Granada	2.501	46.53
South America	4,230.572	78,708.31
Central America	28.051	521.87
Unknown	31,606.799	588,033.47
Total	752,293.722	13,996,162.21

Jewelers' bars, old plate, etc., containing 230,303.973 standard ounces, of the value of $4,284,724.22, were deposited.

The redeposits contained 1,942,487.983 standard ounces, of the value of $36,139,311.27, as shown by the following table:

REDEPOSITS OF GOLD BULLION.

Institution at which manufactured.	Institution at which deposited, fine bars.		
	Philadelphia.	New York.	Total.
	Standard ozs.	*Standard ozs.*	*Standard ozs.*
Philadelphia	17.993		17.993
New York		12,955.438	12,955.438
Denver	7,195.986		7,195.986
Total	7,213.979	12,955.438	20,169.417

Institution at which manufactured.	Institution at which deposited, unparted bars.					
	Philadelphia.	San Francisco.	Denver.	Helena.	Seattle.	Total.
	Standard ozs.	*Standard ozs.*	*Standard ozs.*	*Standard ozs.*	*Standard ozs.*	*Standard ozs.*
Philadelphia	60.569					60.569
Carson		16,636.284				16,636.284
Denver	824,523.793		14.661			824,538.454
Boise	96,928.277					96,928.277
Helena	118,054.956			581.870		118,636.826
Charlotte	14,277.206					14,277.206
St. Louis	4,660.560					4,660.560
Deadwood	29,068.662					29,068.662
Seattle		817,457.219			54.509	817,511.728
Total	1,087,574.023	834,093.503	14.661	581.870	54.509	1,922,318.566

The following table exhibits the weight and value of deposits and purchases of gold:

WEIGHT OF THE ORIGINAL DEPOSITS AND REDEPOSITS OF GOLD BULLION AT THE MINTS AND ASSAY OFFICES OF THE UNITED STATES DURING THE FISCAL YEARS 1901 AND 1902, AND THE INCREASE OR DECREASE OF THE SAME DURING THE LATTER YEAR.

Classification of deposits of gold.	Fiscal year.		Increase, 1902.	Decrease, 1902.
	1901.	1902.		
ORIGINAL DEPOSITS.				
Domestic:	*Standard ozs.*	*Standard ozs.*	*Standard ozs.*	*Standard ozs.*
Unrefined	1,286,803.320	1,230,004.009		56,799.311
Refinery bars	926,435.908	906,813.297		19,622.611
Refined bullion	2,781,731.927	2,949,119.770	167,387.843	
Domestic coin:				
Purchases	37,953.456	37,148.867		804.589
Treasury transfers	22,041.210	42,855.220	20,814.010	
Foreign bullion:				
Unrefined	1,281,088.112	944,375.084		336,713.028
Refined	180,356.066	33,306.212		147,049.854
Foreign coin	1,499,973.790	752,293.722		747,680.068
Jewelers' bars, old plate, etc.	212,831.545	230,303.973	17,472.428	
Total original deposits	8,229,215.334	7,126,220.154	205,674.281	1,308,669.461
REDEPOSITS.				
Fine bars	395,965.795	20,169.417		375,796.378
Mint bars				
Unparted bars	2,164,246.871	1,922,318.566		241,928.305
Total redeposits	2,560,212.666	1,942,487.983		617,724.683
Total gold operated on	10,789,428.000	9,068,708.137	205,674.281	1,926,394.144

VALUE OF THE ORIGINAL DEPOSITS AND REDEPOSITS OF GOLD BULLION AT THE MINTS AND ASSAY OFFICES OF THE UNITED STATES DURING THE FISCAL YEARS 1901 AND 1902, AND THE INCREASE OR DECREASE OF THE SAME DURING THE LATTER YEAR.

Classification of deposits of gold.	Fiscal year.		Increase 1902.	Decrease 1902.
	1901.	1902.		
ORIGINAL DEPOSITS.				
Domestic:				
Unrefined	$23,940,334.96	$22,883,788.77		$1,056,546.19
Refinery bars	17,236,016.88	16,870,945.07		365,071.81
Refined bullion	51,753,152.14	54,867,344.55	$3,114,192.41	
Domestic coin:				
Purchases	706,110.84	691,141.74		14,969.10
Treasury transfers	410,069.02	797,306.42	387,237.40	
Foreign bullion:				
Unrefined	23,834,197.43	17,569,766.45		6,264,430.98
Refined	3,355,461.69	619,650.45		2,735,811.24
Foreign coin	27,906,489.13	13,996,162.21		13,910,326.92
Jewelers' bars, old plate, etc	3,959,650.29	4,284,724.22	325,073.93	
Total original deposits	158,101,482.38	132,580,829.88	3,826,503.74	24,347,156.24
REDEPOSITS.				
Fine bars	7,366,805.48	375,244.92		6,991,560.56
Mint bars				
Unparted bars	40,265,058.03	35,764,066.35		4,500,991.68
Total redeposits	47,631,863.51	36,139,311.27		11,492,552.24
Total gold operated upon	200,733,345.89	168,720,141.15	3,826,503.74	35,839,708.48

DEPOSITS OF SILVER BULLION, FISCAL YEAR 1902.

Including silver contained in gold deposits, the deposits and purchases of silver during the fiscal year ended June 30, 1902, exclusive of redeposits, amounted to 6,063,186.38 standard ounces, against 12,449,234.35 standard ounces reported for the previous year.

Deposits of silver bullion may be made at a mint or assay office for conversion into bars, and these, when delivered to the depositor and disposed of by him, may find their way to another one of the Government institutions. These bars bearing the stamp of the mint service are then classified as redeposits.

The aggregate of all deposits and purchases, including redeposits, at all the mints and assay offices shows the total operations of the mint service. This aggregate of silver received in the fiscal year was 7,681,214.54 standard ounces.

The deposits of domestic bullion amounted to 1,583,399.41 standard ounces, of which 450,531.01 standard ounces were in a crude condition, direct from miners operating in various States; 84,587.38 standard ounces of refinery bars (less than 0.992 in fineness) and 1,583,399.41 standard ounces in refined bullion (fineness of 0.992 and over) being bullion received from private refineries, chlorination and cyanide works.

UNCURRENT DOMESTIC SILVER COIN FOR RECOINAGE.

Uncurrent and mutilated domestic coins were received for recoinage containing 2,527,878.32 standard ounces, of the coinage value in silver dollars of $2,941,531.12, or the coinage value in new subsidiary coins of $3,145,105.17.

Of this amount 2,525,019.26 standard ounces were received from the Treasury and 2,859.06 standard ounces were received over the counter at the various mints and assay offices.

Foreign silver coin containing 32,516.57 standard ounces were deposited as shown by the following table:

DEPOSITS OF FOREIGN SILVER COIN.

Country of coinage.	Standard ounces.	Coining value.
Mexico	153.38	$178.48
Spain	376.74	438.39
Central America	6,131.90	7,135.30
South America	6,380.65	7,424.76
San Domingo	3,279.18	3,815.77
China	65.61	76.34
Porto Rico	194.31	226.11
Other	15,934.80	18,542.31
Total	32,516.57	37,837.46

Jeweler's bars, old plate, etc., containing 639,366.20 standard ounces were deposited.

The redeposits containing 1,618,214.54 standard ounces are shown by the following table:

REDEPOSITS OF SILVER BULLION.

Institution at which manufactured.	Institution at which deposited. Fine bars. San Francisco.	Fine bars. New York.	Total.	Standard bars. New York.
	Standard ozs.	*Standard ozs.*	*Standard ozs.*	*Standard ozs.*
Philadelphia	1,025,367.31		1,025,367.31	
New Orleans		1,384.06	1,384.06	
New York		47,013.50	47,013.50	1,719.91
Total	1,025,367.31	48,397.56	1,073,764.87	1,719.91

Institution at which manufactured.	Institution at which deposited unparted bars. Philadelphia.	San Francisco.	Denver.	Helena.	Seattle.	Total.
	Standard ozs.	*Standard ozs.*	*Standard ozs.*	*Standard ozs.*	*Standard ozs.*	*Standard ozs.*
Philadelphia	10.44					10.44
Carson		9,771.46				9,771.46
Denver	87,454.32		7.52			87,461.84
Boise	31,750.47					31,750.47
Helena	35,377.41			506.71		35,884.12
Charlotte	1,054.49					1,054.49
St. Louis	814.05					814.05
Deadwood	11,841.87					11,841.87
Seattle		161,116.01			18.34	161,134.35
Total	168,303.05	170,887.47	7.52	506.71	18.34	339,723.09

The face value and denomination of the coin referred to is shown in the following table:

UNCURRENT SILVER COIN.

Denomination.	Face value. Transferred from Treasury.	Face value. Purchased over counter.	Total.
Trade dollars		$125.00	$125.00
Silver dollars		1,893.00	1,893.00
Half dollars	$1,487,489.00	776.50	1,488,265.50
Quarter dollars	1,075,397.00	494.50	1,075,891.50
Twenty-cent pieces	215.40	1.40	216.80
Dimes	768,981.40	229.50	769,210.90
Half dimes	1,301.55	19.95	1,321.50
Three-cent pieces	52.71	12	52.83
Total	3,333,437.06	3,539.97	3,336,977.03
Loss subsidiary value by recoinage	191,889.02	35.64	191,924.66
Gain by recoinage		52.80	52.80
Net loss			191,871.86

Foreign silver bullion, unrefined, containing 1,280,025.88 standard ounces was received, as shown by the following table:

DEPOSITS OF FOREIGN SILVER BULLION.

Country of production.	Unrefined.	
	Standard ounces.	Coining value.
Canada:		
British Columbia	21,307.78	$24,794.51
Klondike, Northwest Territory	138,452.35	161,108.18
Nova Scotia	1,312.25	1,526.98
Ontario and Quebec	5,245.46	6,103.81
Mexico	1,025,982.63	1,193,870.70
Central America	30,089.42	35,013.14
South America	57,273.51	66,645.54
West Indies	278.10	323.61
Spanish Honduras	77.13	89.75
Other	7.25	8.43
Total	1,280,025.88	1,489,484.65

There were no deposits of refined foreign silver bullion.

The following tables exhibit the weight and value of deposits and redeposits of silver:

WEIGHT OF THE ORIGINAL DEPOSITS AND REDEPOSITS OF SILVER BULLION AT THE MINTS AND ASSAY OFFICES OF THE UNITED STATES DURING THE FISCAL YEARS 1901 AND 1902 AND THE INCREASE OR DECREASE OF THE SAME DURING THE LATTER YEAR.

Classification of deposits of silver.	Fiscal year.		Increase 1902.	Decrease 1902.
	1901.	1902.		
ORIGINAL DEPOSITS.				
Domestic:	*Standard ozs.*	*Standard ozs.*	*Standard ozs.*	*Standard ozs.*
Unrefined	478,374.68	450,531.01		27,843.67
Refinery bars	91,452.17	84,587.38		6,864.79
Refined bullion	2,171,005.29	1,048,281.02		1,122,724.27
Domestic coin:				
Purchases	3,394.85	2,750.34		644.51
Treasury transfers	2,900,287.61	2,525,019.26		375,268.35
Trade dollars	283.67	108.72		174.95
Foreign bullion, unrefined	1,451,276.81	1,280,025.88		171,250.93
Foreign coin	4,722,440.69	32,516.57		4,689,924.12
Jeweler's bars—old plate, etc	630,718.58	639,366.20	8,647.62	
Total original deposits	12,449,234.35	6,063,186.38	8,647.62	6,394,695.59
REDEPOSITS.				
Fine bars	25,662,718.88	1,073,764.87		24,588,954.01
Standard bars	605,753.21	1,719.91		604,033.30
Mint bars		203,006.67	203,006.67	
Unparted bars	414,428.21	339,723.09		74,705.12
Total redeposits	26,682,900.30	1,618,214.54	203,006.67	25,267,692.43
Total silver operated upon	39,132,134.65	7,681,400.92	211,654.29	31,662,388.02

VALUE OF THE ORIGINAL DEPOSITS AND REDEPOSITS OF SILVER BULLION AT THE MINTS AND ASSAY OFFICES OF THE UNITED STATES DURING THE FISCAL YEARS 1901 AND 1902, AND THE INCREASE OR DECREASE OF THE SAME DURING THE LATTER YEAR.

Classification of deposits of silver.	Fiscal year—		Increase, 1902.	Decrease, 1902.
	1901.	1902.		
ORIGINAL DEPOSITS.				
Domestic:				
Unrefined	$556,654.13	$524,254.22		$32,399.91
Refinery bars	106,417.07	98,428.95		7,988.12
Refined bullion	2,526,260.70	1,219,817.92		1,306,442.78
Domestic coin:				
Purchases	3,950.37	3,200.40		749.97
Treasury transfers	3,374,880.14	2,938,204.21		436,675.93
Trade dollars	330.09	126.51		203.58
Foreign bullion, unrefined	1,688,758.46	1,489,484.65		199,273.81
Foreign coin	5,495,203.70	37,837.46		5,457,366.24
Jewelers' bars	733,927.07	743,989.76	$10,062.69	
Total original deposits	14,486,381.73	7,055,344.08	10,062.69	7,441,100.34
REDEPOSITS.				
Fine bars	29,862,072.88	1,249,471.85		28,612,601.03
Standard bars	704,876.46	2,001.35		702,875.11
Mint bars		236,225.95	236,225.95	
Unparted bars	482,243.73	395,314.14		86,929.59
Total redeposits	31,049,193.07	1,883,013.29	236,225.95	29,402,405.73
Total silver operated upon	45,535,574.80	8,938,357.37	246,288.64	36,843,506.07

DEPOSITS OF GOLD AND SILVER SINCE 1880.

The value of gold and silver received at the mints and assay offices, by fiscal years, since 1880 is shown by the following table:

VALUE OF THE GOLD AND SILVER (NOT INCLUDING REDEPOSITS) RECEIVED AT THE MINTS AND ASSAY OFFICES SINCE 1880.

Fiscal years.	Gold.	Silver (coining value).	Total value.
1880	$98,835,096	$34,640,522	$133,475,618
1881	130,833,102	30,791,146	161,624,248
1882	66,756,652	33,720,491	100,477,143
1883	46,347,106	36,869,834	83,216,940
1884	46,326,678	36,520,290	82,846,968
1885	52,894,075	36,789,774	89,683,849
1886	44,909,749	35,494,183	80,403,932
1887	68,223,072	47,756,918	115,979,990
1888	72,225,497	41,331,014	113,556,511
1889	42,136,436	41,238,151	83,374,587
1890	42,663,095	42,644,719	85,307,814
1891	48,485,801	71,985,985	120,471,786
1892	61,131,460	83,177,666	144,309,126
1893	46,449,842	84,233,832	130,683,674
1894	71,909,513	28,697,031	100,606,544
1895	65,161,067	15,234,700	80,395,767
1896	68,769,384	11,672,078	80,441,462
1897	87,003,338	9,470,623	96,473,961
1898	147,693,195	13,261,600	160,954,795
1899	143,497,191	16,376,383	159,873,574
1900	133,920,119	13,260,960	147,181,079
1901	153,101,681	14,486,382	167,588,063
1902	132,580,830	7,055,344	139,636,174

DEPOSITS OF GOLD SINCE 1873.

The value of the deposits of gold bullion, coin, and jewelers' bars at the mints and assay offices of the United States, by fiscal years, since 1873 is exhibited in the following table:

DEPOSITS OF GOLD AT UNITED STATES MINTS AND ASSAY OFFICES SINCE 1873.

Fiscal year ended June 30—	Character of gold deposited.					Total.
	Domestic bullion.	Domestic coin (coining value).	Foreign bullion.	Foreign coin (U. S. coining value).	Jewelers' bars, old plate, etc.	
1873	$28,868,569.78	$27,116,948.27	$426,107.44	$518,542.14	$774,218.25	$57,704,385.88
1874	29,736,387.82	6,275,367.29	3,162,519.92	9,313,882.47	654,353.56	49,142,511.06
1875	34,266,124.52	1,714,311.50	739,439.66	1,111,792.26	724,625.96	38,556,293.90
1876	37,590,529.39	417,947.15	1,141,905.76	2,111,083.80	681,819.32	41,943,285.42
1877	43,478,103.93	447,339.68	1,931,163.12	2,093,260.73	837,911.25	48,787,778.71
1878	48,075,123.76	301,021.79	2,068,679.05	1,316,461.09	907,932.20	52,669,217.89
1879	38,549,705.89	198,083.17	1,069,796.8.	1,498,819.71	937,751.14	42,254,156.80
1880	35,821,705.40	209,328.82	21,200,997.23	40,426,559.63	1,176,505.77	98,835,096.85
1881	35,815,036.55	440,776.97	37,771,472.26	55,462,385.74	1,343,430.93	130,833,102.45
1882	31,298,511.97	599,356.80	12,783,807.04	20,304,810.78	1,770,166.36	66,756,652.95
1883	32,481,642.38	374,129.23	4,727,143.22	6,906,083.80	1,858,107.42	46,347,106.05
1884	29,079,596.33	263,117.17	6,023,734.45	9,095,461.45	1,864,769.26	46,326,678.66
1885	31,584,436.64	325,210.97	11,221,846.45	7,893,217.77	1,869,363.26	52,894,075.09
1886	32,456,493.64	393,545.28	4,317,068.27	5,673,565.04	2,069,077.00	44,909,749.23
1887	32,973,027.41	516,984.63	22,571,328.70	9,896,512.28	2,265,219.85	68,223,072.87
1888	32,406,306.59	492,512.60	21,741,042.44	14,596,885.03	2,988,750.90	72,225,497.56
1889	31,440,778.93	585,066.87	2,136,516.66	4,447,475.99	3,526,597.31	42,136,435.76
1890	30,474,900.25	655,474.96	2,691,932.29	5,298,773.93	3,542,013.83	42,663,095.26
1891	31,555,116.85	588,847.16	4,054,822.86	8,256,303.80	4,035,710.15	48,485,800.82
1892	31,961,546.11	557,967.86	10,935,154.69	14,040,187.70	3,636,603.68	61,131,460.04
1893	33,286,167.94	792,470.43	2,247,730.78	6,293,296.33	3,830,176.02	46,449,841.50
1894	38,696,951.40	2,093,615.46	15,614,118.19	12,386,406.81	3,118,421,45	71,909,513.31
1895	44,371,949.83	1,188,258.21	14,108,435.74	2,278,614.07	3,213,809.43	65,161,067.28
1896	53,910,957.02	1,670,005.53	6,572,390.14	3,227,409.06	3,388,622.06	68,769,383.81
1897	60,618,239.77	1,015,314.39	9,371,521.03	13,188,013.86	2,810,248.66	87,003,337.71
1898	69,881,120.57	1,187,682.99	26,477,370.06	47,210,077.84	2,936,943.37	147,693,194.83
1899	76,252,487.23	1,158,307.57	30,336,559.47	32,785,152.48	2,964,683.90	143,497,190.65
1900	87,458,836.23	1,389,096.68	22,720,150.22	18,834,495.53	3,517,540.93	133,920,119.59
1901	92,929,695.86	1,116,179.86	27,189,659.12	27,906,489.13	3,959,656.64	153,101,680.61
1902	94,622,078.39	1,488,448.16	18,189,416.90	13,996,162.21	4,284,724.22	132,580,829.88
Total	1,331,942,128.38	55,567,717.45	345,543,830.05	398,368,182.46	71,489,754.08	2,202,911,612.42

COINAGE OF THE UNITED STATES.

The following table exhibits the coinage of the year by denominations, pieces, and value:

COINAGE EXECUTED AT THE MINTS OF THE UNITED STATES DURING THE FISCAL YEAR 1902.

Denomination.	Pieces.	Value.
Gold:		
Double eagles	1,852,088	$37,041,760.00
Eagles	1,473,643	14,736,430.00
Half eagles	1,978,133	9,890,665.00
Quarter eagles	124,687	311,717.50
Total	5,428,551	61,980,572.50
Silver:		
Standard dollars	19,402,800	19,402,800.00
Half dollars	8,831,118	4,415,559.00
Quarter dollars	15,334,379	3,833,594.75
Dimes	24,644,157	2,464,415.70
Total	68,212,454	30,116,369.45
Minor:		
Five-cent nickels	31,298,779	1,564,938.95
One-cent bronze	86,479,722	864,797.22
Total	117,778,501	2,429,736.17
Total coinage	191,419,506	94,526,678.12

All the standard silver dollars embraced in the above table were coined from the balance of the silver bullion on hand purchased under the act of July 14, 1890, and contained 16,674,281.26 standard ounces of silver, costing $13,578,116.56. The seigniorage or profit on this coinage was $5,824,683.44, which has been deposited in the Treasury of the United States.

Of the subsidiary coinage $10,713,569.45 executed during the year $1,948,681.20 were from bullion received from the Treasury for recoinage and $5,996,000 from silver bullion purchased under the provision of section 3526 of the Revised Statutes and from the act of July 14, 1890, $2,110,208.25 from Porto Rican coins redeemed and melted, and $658,680 value of silver purchased, partings, charges, and fractions.

The loss on the recoinage of $1,501,592.50 in worn and uncurrent gold coins was $13,144.31, and the net loss on the recoinage of $3,336,977.03 in worn and uncurrent silver coins was $191,871.86, for which the Treasury of the United States was reimbursed from the appropriation for that purpose.

The number of pieces of domestic coin manufactured by the mints of the United States during the fiscal years 1901 and 1902 and the increase or decrease in the number of pieces coined in the last year named are shown in the following table:

COINAGE OF THE MINTS OF THE UNITED STATES, BY PIECES, DURING THE FISCAL YEARS 1901 AND 1902, AND THE INCREASE OR DECREASE OF THE SAME DURING THE LATTER YEAR.

Classification of coinage.	Fiscal year.		Increase, 1902.	Decrease, 1902.
	1901.	1902.		
Gold coins	8,783,112	5,428,551	.....	3,354,561
Silver dollars	24,298,850	19,402,800	.....	4,896,050
Subsidiary silver coins	50,488,814	48,809,654	.....	1,679,160
Minor coins	93,428,356	117,778,501	24,350,145	.....
Total	176,999,132	191,419,506	24,350,145	9,929,771

The value of the domestic coinage executed by the mints of the United States during the fiscal years 1901 and 1902 and the increase or decrease in the nominal value of the coinage during the year named is shown by the following table:

COINAGE OF THE MINTS OF THE UNITED STATES, BY VALUE, DURING THE FISCAL YEARS 1901 AND 1902, WITH THE INCREASE OR DECREASE OF THE SAME DURING THE LATTER YEAR.

Classification of coinage.	Fiscal year.		Increase, 1902.	Decrease, 1902.
	1901.	1902.		
Gold coins	$99,065,715.00	$61,980,572.50	.....	$37,085,142.50
Silver dollars	24,298,850.00	19,402,800.00	.....	4,896,050.00
Subsidiary silver coin	10,966,648.50	10,713,569.45	.....	253,079.05
Minor coins	2,009,568.08	2,429,736.17	$420,168.09	.....
Total	136,340,781.58	94,526,678.12	420,168.09	42,234,271.55

The number of silver dollars coined from bullion purchased under the act of July 14, 1890, from August 13, 1890, to June 30, 1902, aggregated 158,952,600 pieces, containing 122,939,901.69 ounces of fine

silver, costing $114,545,740.49, giving a seigniorage of $44,406,859.51. All profits on the coinage of silver dollars are deposited each month in the Treasury of the United States.

The aggregate number of silver dollars coined from March 1, 1878, to June 30, 1902, under the provisions of the acts of February 28, 1878, July 14, 1890, and March 3, 1891, was 542,197,865, as shown by the following table:

COINAGE OF SILVER DOLLARS.

Coinage under act of—		Amount.
Feb. 28, 1878 (Bland-Allison)		$378,166,793
From July 14, 1890, to repeal of the Sherman Act, Oct. 31, 1893	$36,087,285	
From Nov. 1, 1893, to June 12, 1898	42,139,872	
Coined under the war-revenue bill approved June 13, 1898	80,725,443	
Total under act of July 14, 1890		158,952,600
Mar. 3, 1891 (recoinage of trade dollars)		5,078,472
Total		542,197,865

There are exhibited in the appendix tables showing by denominations and values domestic coins manufactured during the fiscal year, and also tables of the total coinage by denominations, institutions, and years from the establishment of the Mint in 1792.

The following table exhibits the number of fine ounces and value of gold and silver coinage of the United States, by calendar years, since 1873:

COINAGE OF GOLD AND SILVER AT THE MINTS OF THE UNITED STATES SINCE 1873.

Calendar years.	Gold.		Silver.	
	Fine ounces.	Value.	Fine ounces.	Coining value.
1873	2,758,475	$57,022,748	3,112,891	$4,024,748
1874	1,705,441	35,254,630	5,299,421	6,851,777
1875	1,594,050	32,951,940	11,870,635	15,347,893
1876	2,253,281	46,579,453	18,951,777	24,503,308
1877	2,128,493	43,999,864	21,960,246	28,393,045
1878	2,408,400	49,786,052	22,057,548	28,518,850
1879	1,890,499	39,080,080	21,323,498	27,569,776
1880	3,014,163	62,308,279	21,201,232	27,411,694
1881	4,685,162	96,850,890	21,609,970	27,940,164
1882	3,187,317	65,887,685	21,635,469	27,973,132
1883	1,414,581	29,241,990	22,620,701	29,246,968
1884	1,160,601	23,991,756	22,069,935	28,534,866
1885	1,343,519	27,773,012	22,400,433	28,962,176
1886	1,400,240	28,945,542	24,817,064	32,086,709
1887	1,159,664	23,972,383	27,218,101	35,191,081
1888	1,518,046	31,380,808	25,543,242	33,025,606
1889	1,035,899	21,413,931	27,454,465	35,496,683
1890	990,100	20,467,182	30,320,999	39,202,908
1891	1,413,614	29,222,005	21,284,115	27,518,857
1892	1,682,832	34,787,223	9,777,084	12,641,078
1893	2,757,231	56,997,020	6,808,413	8,802,797
1894	3,848,045	79,546,160	7,115,896	9,200,351
1895	2,883,941	59,616,358	4,407,055	5,698,010
1896	2,276,192	47,053,060	17,858,594	23,089,899
1897	3,677,878	76,028,485	14,298,769	18,487,297
1898	3,772,561	77,985,757	17,815,385	23,034,033
1899	5,386,277	111,344,220	20,156,957	26,061,520
1900	4,802,328	99,272,942	28,072,162	36,295,321
1901	4,930,439	101,735,188	23,851,621	30,838,461
Total	73,079,269	1,510,496,643	542,913,678	701,949,008

RECOINAGE OF STANDARD SILVER DOLLARS.

No mutilated or uncurrent standard silver dollars were transferred from the Treasury to the mints for recoinage during the fiscal year 1902. There were, however, purchased as bullion 1,786 mutilated silver dollars, which were for use in the manufacture of subsidiary silver coins.

The total number of mutilated and uncurrent silver dollars received and melted at the mints, and at the assay office at New York, from 1883 to the close of the fiscal year 1902, is shown in the following statement:

Fiscal year.	Amount.	Fiscal year.	Amount.
1883	$621	1894	$15,055
1884		1895	18,580
1885	1,850	1896	2,034
1886		1897	1,898
1887	8,292	1898	1,365
1888	14,055	1899	1,734
1889	31,042	1900	1,341
1890	11,977	1901	1,786
1891	10,800	1902	1,893
1892	42,881		
1893	10,500	Total	177,704

RECOINAGE OF UNCURRENT COIN.

The condition of the current coins has been materially improved by the extensive recoinage of recent years.

The following table shows the face value of abraded subsidiary coin transferred for recoinage, the amount of new coin made therefrom, and the loss and percentage of loss for each fiscal year from 1891 to 1902:

RESULTS OF RECOINAGE OF UNCURRENT SUBSIDIARY SILVER COIN.

Year.	Face value.	New coin.	Loss.
1891	$910,046.69	$861,680.41	$48,366.28
1892	7,118,602.78	6,937,886.02	180,716.76
1893	7,618,198.25	7,381,289.58	236,908.67
1894	7,184,472.17	6,924,753.05	259,719.12
1895	4,361,761.36	4,161,820.73	199,940.63
1896	4,627,141.46	4,377,258.40	249,883.06
1897	3,197,998.50	3,048,861.64	149,136.86
1898	6,109,772.32	5,820,159.16	289,613.16
1899	8,584,304.26	8,098,485.18	485,819.08
1900	5,261,070.35	4,950,088.96	310,981.39
1901	3,832,280.69	3,613,021.59	219,259.10
1902	3,333,437.06	3,141,548.04	191,889.02
Total	62,139,085.89	59,316,852.76	2,822,233.13

PERCENTAGE OF ABRASION.

For the purpose of obtaining approximate figures as to the rate of loss on the subsidiary coins by abrasion a record was kept last year at the Philadelphia and New Orleans mints of the weight of all uncurrent subsidiary coins received at those institutions, with the year of their coinage.

The tables given below show the number of these coins received, year of coinage, amount of loss by abrasion, and percentage to standard weight.

The total of these coins received at Philadelphia was as follows:

UNCURRENT SUBSIDIARY COIN RECEIVED AT PHILADELPHIA MINT FOR RECOINAGE.

Denomination.	Face value.	Weights.			Loss.
		Net weight.	Standard.	Abrasion.	
		Ounces.	*Ounces.*	*Ounces.*	*Per cent.*
Halves	$66,600.00	51,409.17	53,499.24	2,090.07	3.906
Quarters	55,000.00	41,520.73	44,171.98	2,651.28	6.002
Dimes	42,377.00	31,741.64	34,081.66	2,340.02	6.866
20-cent pieces	3.40	2.67	2.73	.06	2.198
Half dimes	16.75	12.42	14.39	1.97	1.367
3-cent pieces	2.85	2.18	2.04	.....	.....
Total	164,000.00	124,688.81	131,772.04	7,083.40	5.307

UNCURRENT HALVES, SEPARATED BY YEARS.

Year.	Face value.	Weights.			Loss.	Standard weight of $1,000.
		Net.	Standard.	Abrasion.		
		Ounces.	*Ounces.*	*Ounces.*	*Per cent.*	*Ounces.*
1830	$42.50	35.20	36.83	1.63	4.43	866⅔
1831	26.00	22.08	22.53	.45	2.00	866⅔
1832	35.50	30.01	30.77	.76	2.47	866⅔
1833	25.00	21.18	21.67	.49	2.26	866⅔
1834	35.00	29.63	30.33	.70	2.31	866⅔
1835	19.00	16.01	16.47	.46	2.79	866⅔
1836	25.50	21.67	22.10	.43	1.95	866⅔
1837	13.00	10.65	11.27	.62	5.50	866⅔
1838	14.50	11.98	12.46	.48	3.85	859.375
1839	15.00	12.08	12.89	.81	6.28	859.375
1840	33.00	26.36	28.36	2.00	7.05	859.375
1841	15.00	12.05	12.89	.84	6.52	859.375
1842	58.50	46.63	50.27	3.64	7.23	859.375
1843	127.50	102.71	109.57	6.86	6.26	859.375
1844	93.50	74.80	80.35	5.55	6.09	859.375
1845	96.50	77.38	82.93	5.55	6.69	859.375
1846	116.00	92.92	99.69	6.77	6.79	859.375
1847	106.50	85.21	91.52	6.31	6.89	859.375
1848	73.50	58.58	63.16	4.58	7.25	859.375
1849	69.00	54.73	59.30	4.57	7.71	859.375
1850	55.50	43.89	47.70	3.81	7.99	859.375
1851	7.50	6.01	6.45	.44	6.82	859.375
1852	4.00	3.13	3.43	.30	8.75	859.375
1853	1,735.00	1,335.32	1,388.00	52.68	3.80	800
1854	3,339.50	2,555.15	2,671.60	116.45	4.36	800
1855	1,492.00	1,147.54	1,193.60	46.06	3.86	800
1856	1,310.00	1,005.27	1,048.00	42.73	4.08	800
1857	1,117.00	860.14	893.60	33.46	3.74	800
1858	4,644.50	3,559.85	3,715.60	155.75	4.19	800
1859	1,320.00	1,014.94	1,056.00	41.06	3.89	800
1860	653.50	501.63	522.80	21.17	4.05	800
1861	1,666.50	1,281.93	1,333.20	51.27	3.85	800
1862	220.00	168.90	176.00	7.10	4.04	800
1863	239.00	182.74	191.20	8.46	4.43	800
1864	219.00	167.39	175.20	7.81	4.45	800
1865	231.00	177.44	184.80	7.36	3.98	800
1866	381.00	291.52	304.80	13.28	4.36	800
1867	447.50	342.28	358.00	15.72	4.39	800
1868	407.00	312.97	325.60	12.63	3.88	800
1869	615.50	495.07	516.40	21.33	4.13	800
1870	575.50	441.34	460.40	19.06	4.13	800
1871	1,730.50	1,327.64	1,384.40	56.76	4.09	800
1872	927.50	710.90	742.00	31.10	4.19	800
1873	2,089.00	1,611.24	1,671.20	59.96	3.59	800
1874	1,878.50	1,450.25	1,509.94	59.69	3.95	803.75
1875	7,644.50	5,911.67	6,144.26	232.59	3.79	803.75
1876	11,735.00	9,056.13	9,432.00	375.87	3.99	803.75
1877	14,589.50	11,279.09	11,726.31	447.22	3.81	803.75
1878	1,258.00	974.27	1,011.12	36.85	3.64	803.75
1879	1.50	31.93	33.36	1.43	4.29	803.75
1880	16.50	12.92	13.25	.33	2.49	803.75
1881	21.50	16.84	17.28	.44	2.55	803.75
1882	8.50	6.67	6.83	.16	2.34	803.75
1883	13.50	10.62	10.85	.23	2.12	803.75
1884	11.00	8.64	8.84	.20	2.26	803.75
1885	9.50	7.49	7.64	.15	1.96	803.75
1886	12.50	9.84	10.05	.21	2.09	803.75

UNCURRENT HALVES, SEPARATED BY YEARS—Continued.

Year.	Face value.	Weight.			Loss.	Standard weight of $1,000.
		Net.	Standard.	Abraison.		
		Ounces.	*Ounces.*	*Ounces.*	*Per cent.*	*Ounces.*
1887	$10.50	8.32	8.44	0.12	1.42	803.75
1888	24.50	19.33	19.69	.36	1.83	803.75
1889	28.00	21.98	22.51	.53	2.35	803.75
1890	39.00	30.74	31.35	.61	1.95	803.75
1891	533.00	421.27	428.40	7.13	1.66	803.75
1892	162.50	127.99	130.61	2.62	2.01	803.75
1893	468.50	369.23	376.56	7.33	1.95	803.75
1894	352.50	278.20	283.32	5.12	1.81	803.75
1895	203.50	162.39	163.56	1.17	.72	803.75
1896	90.50	72.14	72.74	.60	.83	803.75
1897	95.50	76.20	76.76	.56	.73	803.75
1898	91.00	72.77	73.14	.37	.51	803.75
1899	101.00	80.70	81.18	.48	.59	803.75
1900	78.50	62.80	63.09	.29	.46	803.75
1901	25.00	20.01	20.09	.08	.40	803.75
Undetermined	506.00	377.24	404.80	27.56	6.81	803.75
1803	.50	.43	.43			866⅔
1809	.50	.42	.43	.01	2.30	866⅔
1810	1.50	1.25	1.30	.05	3.80	866⅔
1817	.50	.43	.43			866⅔
1818	1.50	1.25	1.30	.05	3.80	866⅔
1821	1.50	1.28	1.30	.02	1.50	866⅔
1822	.50	.42	.43	.01	2.30	866⅔
1824	.50	.42	.43	.01	2.30	866⅔
1825	2.00	1.68	1.73	.05	2.90	866⅔
1826	1.50	1.28	1.30	.02	1.50	866⅔
1827	1.50	1.26	1.30	.04	3.10	866⅔
1828	1.00	.84	.87	.03	3.40	866⅔
1829	2.50	2.14	2.17	.03	1.40	866⅔
1812 to 1829	7.50	6.37	6.50	.13	2.00	866⅔
1807 to 1829	30.00	25.94	26.01	.07	2.70	866⅔
Total	66,600.00	51,409.17	53,499.24	2,090.07		

UNCURRENT QUARTERS, SEPARATED BY YEARS.

Years.	Face value.	Weights.			Loss.	Standard weight of $1,000.
		Net.	Standard.	Abrasion.		
		Ounces.	*Ounces.*	*Ounces.*	*Per cent.*	*Ounces.*
1825	$0.50	0.40	0.43	0.03	6.97	866⅔
1830	.25	.20	.22	.02	9.09	866⅔
1831	2.00	1.62	1.73	.11	6.35	866⅔
1832	.75	.61	.65	.04	6.15	866⅔
1833	1.00	.81	.87	.06	6.89	866⅔
1834	3.25	2.55	2.82	.27	9.57	866⅔
1835	3.50	2.76	3.03	.27	8.91	866⅔
1836	1.75	1.37	1.52	.15	9.87	866⅔
1837						866⅔
1838	8.50	6.62	7.30	.68	9.31	859.375
1839	9.50	7.25	8.16	.91	11.15	859.375
1840	14.25	10.86	12.25	1.39	11.35	859.375
1841	16.50	12.66	14.18	1.52	10.72	859.375
1842	22.00	16.37	18.91	2.54	13.43	859.375
1843	23.50	17.97	20.20	2.23	11.04	859.375
1844	32.25	24.73	27.71	2.98	10.75	859.375
1845	26.50	20.30	22.77	2.47	10.85	859.375
1846	14.00	10.71	12.03	1.32	10.97	859.375
1847	24.50	18.86	21.06	2.20	10.45	859.375
1848	4.00	3.07	3.43	.36	10.50	859.375
1849	15.75	12.11	13.54	1.43	10.56	859.375
1850	18.50	14.22	15.90	1.68	10.57	859.375
1851	28.75	21.39	24.71	3.32	13.44	859.375
1852	6.75	5.10	5.80	.70	12.69	859.375
1853	2,752.75	2,060.79	2,202.20	141.41	6.42	800
1854	2,633.00	1,959.76	2,106.40	146.64	6.96	800
1855	281.50	212.90	225.20	12.30	5.46	800
1856	1,501.25	1,122.71	1,201.00	78.29	6.53	800
1857	1,838.00	1,380.09	1,470.40	90.31	6.14	800
1858	1,477.25	1,109.16	1,181.80	72.64	6.15	800
1859	299.25	225.78	239.40	13.62	5.69	800
1860	230.25	173.55	184.20	10.65	5.78	800
1861	1,019.75	764.37	815.80	51.43	6.30	800
1862	193.00	144.94	154.40	9.46	6.13	800
1863	20.75	15.83	16.60	.77	4.64	800

Uncurrent Quarters, Separated by Years—Continued.

Years.	Face value.	Weights.			Loss.	Standard weight of $1,000.
		Net.	Standard.	Abrasion.		
		Ounces.	*Ounces.*	*Ounces.*	*Per cent.*	*Ounces.*
1864	$13.50	10.20	10.80	0.60	5.56	800
1865	11.75	8.91	9.40	.49	5.21	800
1866	6.25	4.62	5.00	.38	7.60	800
1867	10.00	7.93	8.00	.07	.88	800
1868	19.25	14.52	15.40	.88	5.71	800
1869	21.75	16.87	17.40	1.03	5.95	800
1870	31.75	24.48	25.40	.92	3.62	800
1871	55.75	42.41	44.60	2.19	4.91	800
1872	101.25	76.77	81.00	4.23	5.22	800
1873	766.50	577.88	613.20	35.32	5.76	800
1874	429.00	324.55	344.81	20.26	5.88	803.75
1875	2,607.25	1,963.65	2,095.58	131.93	6.30	803.75
1876	13,029.50	9,790.03	10,472.46	682.43	6.52	803.75
1877	11,183.50	8,428.87	8,988.74	559.87	6.23	803.75
1878	1,680.75	1,271.48	1,350.90	79.42	5.88	803.75
1879	9.00	6.77	7.23	.46	6.36	803.75
1880	9.50	7.21	7.63	.42	5.50	803.75
1881	8.75	6.72	7.03	.31	4.41	803.75
1882	6.50	4.99	5.22	.23	4.41	803.75
1883	13.50	10.26	10.85	.59	5.44	803.75
1884	6.50	4.97	5.22	.25	4.79	803.75
1885	18.00	13.87	14.47	.60	4.15	803.75
1886	5.00	3.87	4.02	.15	3.73	803.75
1887	13.00	9.97	10.45	.48	4.59	803.75
1888	488.75	379.10	392.83	13.73	3.50	803.75
1889	18.75	14.60	15.07	.47	3.12	803.75
1890	108.75	84.43	87.41	2.98	3.41	803.75
1891	6,130.50	4,778.55	4,927.39	148.84	3.03	803.75
1892	666.75	516.26	535.90	19.64	3.66	803.75
1893	393.50	306.02	316.28	10.26	3.25	803.75
1894	289.00	225.80	232.28	6.48	2.79	803.75
1895	207.75	163.27	166.98	3.71	2.22	803.75
1896	137.00	108.28	110.11	1.83	1.66	803.75
1897	148.25	117.48	119.16	1.68	1.41	803.75
1898	190.50	151.71	153.11	1.40	.91	803.75
1899	182.50	146.71	146.68	(a)	----------	803.75
1900	155.75	124.87	125.18	.31	.25	803.75
1901	288.00	230.68	231.48	.80	.35	803.75
Undetermined	3,011.75	2,159.25	2,420.69	261.44	10.80	803.75
Total	55,000.00	41,520.73	44.171.98	2,651.28	----------	----------

a No abrasion; .03 ounce heavy.

Uncurrent Dimes, Separated by Years.

Year.	Face value.	Weights.			Loss.	Standard weight of $1,000.
		Net.	Standard.	Abrasion.		
		Ounces.	*Ounces.*	*Ounces.*	*Per cent.*	*Ounces.*
1830	----------	----------	----------	----------	----------	866⅔
1831	$0.70	0.54	0.61	0.07	11.47	862⅜
1832	.10	.29	.34	.05	14.80	862⅜
1833	1.20	.91	1.04	.13	12.50	862⅜
1834	2.00	1.52	1.73	.21	12.14	862⅜
1835	2.20	1.66	1.90	.24	12.63	862⅜
1836	2.10	1.78	2.08	.30	14.34	862⅜
1837	8.40	6.19	7.28	1.09	14.97	862⅜
1838	37.00	27.78	31.80	4.07	12.79	859.375
1839	30.30	22.88	26.04	3.16	12.14	859.375
1840	23.90	17.91	20.54	2.60	12.66	859.375
1841	63.20	47.99	54.31	6.32	11.64	859.375
1842	58.60	44.52	50.36	5.84	11.59	859.375
1843	29.10	22.16	25.01	2.85	11.39	859.375
1844	5.20	3.84	4.47	.63	14.09	859.375
1845	42.90	32.59	36.87	4.28	11.61	859.375
1846	1.30	.96	1.12	.16	14.29	859.375
1847	10.10	7.54	8.68	1.14	13.13	859.375
1848	12.76	9.50	10.91	1.41	12.92	859.375
1849	38.00	28.66	33.66	5.00	14.88	859.375
1850	69.00	52.86	59.30	6.44	10.86	859.375
1851	42.70	32.57	36.69	4.12	11.20	859.375
1852	66.70	50.24	57.32	7.08	12.35	859.375
1853	668.30	477.06	534.64	57.64	10.78	800
1854	304.00	215.60	243.20	27.60	11.12	800

UNCURRENT DIMES, SEPARATED BY YEARS—Continued.

Years.	Face value.	Weights.			Loss.	Standard weight of $1,000.
		Net.	Standard.	Abrasion.		
		Ounces.	*Ounces.*	*Ounces.*	*Per cent.*	*Ounces.*
1855	$72.50	53.78	58.00	4.22	7.28	800
1856	330.60	235.82	264.48	28.66	10.84	800
1857	371.40	266.76	297.12	30.36	10.22	800
1858	118.00	85.76	94.40	8.64	9.15	800
1859	65.80	48.00	52.24	4.24	8.12	800
1860	29.90	22.35	23.92	1.57	6 56	800
1861	103.60	76.04	82.88	6.84	8.25	800
1862	50.40	37.29	40.32	3.03	7.51	800
1863	5.10	3.77	4.08	.31	7.59	800
1864	8.00	5.95	6.40	.45	7.03	800
1865	4.10	3.24	3.62	.38	10.49	800
1866	3.50	2.55	2.80	.25	8.93	800
1867	4.70	3.46	3.76	.30	8.00	800
1868	46.10	34.22	36.88	2.66	7.21	800
1869	30.30	22.45	24.24	1.79	7.38	800
1870	34.80	25.83	27.84	2.01	7.22	800
1871	112.30	82.68	90.64	7.96	8.78	800
1872	255.60	184.53	204.48	19.95	9.27	800
1873	438.00	319.66	350.40	30.74	8.77	800
1874	355.20	258.63	285.49	26.86	9.41	803.75
1875	2,359.60	1,714.34	1,896.63	182.29	9.61	803.75
1876	2,531.60	1,832.45	2,034.77	202.32	9.94	803.75
1877	1,945.30	1,417.06	1,563.53	146.47	9.37	803.75
1878	200.10	146.51	160.83	14.32	8.90	803.75
1879	6.60	4.91	5.30	.39	7.36	803.75
1880	53.20	38.86	42.76	3.90	9.12	803.75
1881	9.70	7.27	7.80	.53	6.79	803.75
1882	658.80	482.21	525.49	43.28	8.24	803.75
1883	1,385.40	1,029.89	1,113.52	83.63	7.50	803.75
1884	802.20	599.79	644.77	44.98	6.96	803.75
1885	636.00	478.46	511.18	32.72	6.40	803.75
1886	1,604.50	1,207.73	1,289.62	81.89	6.34	803.75
1887	4,094.30	3,091.16	3,290.79	199.63	6.07	803.75
1888	2,167.70	1,642.61	1,742.29	99.68	5.72	803.75
1889	2,795.40	2,133.96	2,246.82	112.86	5.02	803.75
1890	4,213.40	3,227.16	3,386.52	159.36	4.71	803.75
1891	8,861.40	6,817.52	7,122.35	304.83	4.28	803.75
1892	862.00	658.03	692.83	34.80	5.02	803.75
1893	314.30	241.46	252.62	11.16	2.04	803.75
1894	89.70	69.22	72.10	2.88	3.99	803.75
1895	51.50	42.36	43.80	1.44	3.29	803.75
1896	57.00	44.36	45.81	1.45	3.17	803.75
1897	157.80	123.98	126.83	2.85	2.25	803.75
1898	179.70	141.82	144.43	2.61	1.81	803.75
1899	186.20	147.85	149.66	1.81	1.21	803.75
1900	127.20	101.43	102.24	.81	.79	803.75
1901	71.30	57.20	57.31	.11	.19	803.75
Undetermined	1,997.10	1,361.80	1,605.17	243.37	15.16	803.75
Total	42,377.00	31,741.64	34,081.66	2,340.02	.....	.....

The result of a similar investigation at New Orleans was as follows:

UNCURRENT HALVES, SEPARATED BY YEARS.

Year.	Face value.	Weights.			Loss.	Standard weight of $1,000.
		Standard.	Net.	Abrasion.		
		Ounces.	*Ounces.*	*Ounces.*	*Per cent.*	*Ounces.*
1806	$0.50	0.43	0.42	0.01	2.325	866⅔
1807	.50	.43	.42	.01	2.325	866⅔
1808	2.00	1.73	1.72	.01	.578	866⅔
1809	1.00	.86	.83	.03	3.488	866⅔
1810	1.00	.86	.85	.01	1.162	866⅔
1811	1.00	.86	.83	.03	3.488	866⅔
1812	1.50	1.29	1.23	.06	4.651	866⅔
1813	1.00	.86	.82	.04	4.651	866⅔
1814	2.00	1.73	1.68	.05	2.890	866⅔
1815	.....	.....	.....	.....	.....	866⅔
1816	.....	.....	.....	.....	.....	866⅔
1817	1.00	.86	.83	.03	3.488	866⅔
1818	2.50	2.16	2.08	.08	3.703	866⅔
1819	3.00	2.59	2.49	.10	3.861	866⅔
1820	.50	.43	.42	.01	2.325	866⅔

UNCURRENT HALVES, SEPARATED BY YEARS—Continued.

Year.	Face value.	Weight.			Loss.	Standard weight of $1,000.
		Standard.	Net.	Abrasion.		
		Ounces.	*Ounces.*	*Ounces.*	*Per cent.*	*Ounces.*
1821	$2.00	1.73	1.68	0.05	2.890	866¾
1822	1.50	1.29	1.26	.03	2.325	866¾
1823	2.00	1.73	1.68	.05	2.890	866¾
1824	3.50	3.03	2.94	.09	2.970	866¾
1825	1.00	.86	.84	.02	2.325	866¾
1826	2.00	1.73	1.68	.05	2.890	866¾
1827	3.50	3.03	2.96	.07	2.310	866¾
1828	2.50	2.16	2.11	.05	2.314	866¾
1829	3.00	2.59	2.52	.07	2.702	866¾
1830	3.00	2.59	2.52	.07	2.702	866¾
1831	5.50	4.76	4.63	.13	2.731	866¾
1832	6.50	5.63	5.48	.15	2.664	866¾
1833	3.00	2.59	2.52	.07	2.702	866¾
1834	10.50	9.09	8.88	.21	2.310	866¾
1835	2.50	2.16	2.11	.05	2.314	866¾
1836	5.50	4.76	4.58	.18	3.781	866¾
1837	3.50	3.00	2.91	.09	3.000	859.375
1838	6.50	5.58	5.38	.20	3.584	859.375
1839	6.50	5.58	5.36	.22	3.942	859.375
1840	29.00	24.92	23.91	1.01	4.052	859.375
1841	14.00	12.03	11.49	.54	4.488	859.375
1842	97.00	83.35	79.72	3.63	4.355	859.375
1843	173.00	148.67	141.95	6.72	4.520	859.375
1844	118.00	101.40	96.84	4.56	4.497	859.375
1845	144.00	123.75	118.01	5.74	4.638	859.375
1846	155.50	133.63	127.77	5.86	4.385	859.375
1847	162.00	139.21	132.91	6.30	4.525	859.375
1848	118.50	101.83	96.92	4.91	4.821	859.375
1849	91.00	78.20	74.90	3.30	4.219	859.375
1850	104.00	89.37	82.24	7.13	7.978	859.375
1851	12.00	10.31	9.61	.70	6.789	859.375
1852	3.50	3.00	2.66	.34	11.333	859.375
1853	2,345.00	1,876.00	1,786.85	89.15	4.752	800
1854	4,773.50	3,818.80	3,622.42	196.38	5.142	800
1855	2,084.50	1,667.60	1,590.19	77.41	4.642	800
1856	2,041.00	1,632.80	1,553.31	79.49	4.868	800
1857	1,543.00	1,234.40	1,175.82	58.58	4.745	800
1858	7,239.00	5,791.20	5,508.89	282.31	4.874	800
1859	2,043.00	1,634.40	1,557.41	76.99	4.710	800
1860	1,056.50	845.20	804.75	40.45	4.785	800
1861	2,712.50	2,170.00	2,070.69	99.31	4.576	800
1862	444.00	355.20	336.66	18.54	5.219	800
1863	493.00	394.40	372.31	22.09	5.600	800
1864	401.50	321.20	303.73	17.47	5.438	800
1865	432.00	345.60	327.76	17.84	5.162	800
1866	723.50	578.80	549.28	29.52	5.100	800
1867	844.50	675.60	640.95	34.65	5.128	800
1868	819.00	655.20	620.74	34.46	5.259	800
1869	1,265.50	1,012.40	963.10	49.30	4.869	800
1870	1,206.00	964.80	917.03	47.77	4.951	800
1871	3,029.50	2,423.60	2,308.82	114.78	4.735	800
1872	1,547.50	1,238.00	1,179.99	58.01	4.685	800
1873	3,579.00	2,876.62	2,742.13	134.49	4.675	803.75
1874	3,245.00	2,608.16	2,493.91	114.25	4.380	803.75
1875	12,202.50	9,807.75	9,374.25	433.50	4.419	803.75
1876	19,217.50	15,446.06	14,750.52	695.54	4.503	803.75
1877	22,718.50	18,259.99	17,473.52	786.47	4.307	803.75
1878	2,125.50	1,708.37	1,631.58	76.79	4.494	803.75
1879	7.50	6.02	5.83	.19	3.156	803.75
1880	13.00	10.44	9.98	.46	4.406	803.75
1881	28.00	22.50	21.63	.87	3.866	803.75
1882	11.00	8.84	8.53	.31	3.506	803.75
1883	23.00	18.48	17.79	.69	3.733	803.75
1884	13.50	10.85	10.48	.37	3.410	803.75
1885	41.00	32.95	31.43	1.52	4.613	803.75
1886	8.00	6.43	6.24	.19	2.954	803.75
1887	8.50	6.83	6.58	.25	3.660	803.75
1888	20.00	16.07	15.63	.44	2.738	803.75
1889	26.00	20.89	20.32	.57	2.728	803.75
1890	29.50	23.71	23.15	.56	2.361	803.75
1891	506.50	407.09	397.95	9.14	2.245	803.75
1892	99.00	79.57	77.22	2.35	2.953	803.75
1893	226.50	182.04	177.10	4.94	2.713	803.75
1894	245.00	196.91	192.45	4.46	2.264	803.75
1895	132.50	106.49	104.34	2.15	2.018	803.75
1896	73.06	58.67	57.77	.90	1.534	803.75
1897	66.50	53.44	52.72	.72	1.347	803.75
1898	75.50	60.68	60.03	.65	1.071	803.75
1899	115.00	92.43	91.74	.69	.746	868.75
1900	125.00	100.46	100.10	.36	.358	893.75

Uncurrent Halves, Separated by Years—Continued.

Year.	Face value.	Weights.			Loss.	Standard weight of $1,000.
		Standard.	Net.	Abrasion.		
		Ounces.	*Ounces.*	*Ounces.*	*Per cent.*	*Ounces.*
1901	$39.00	31.34	31.23	0.11	.350	803.75
1902	.50	.40	.40			803.75
Columbian	20.50	16.47	16.30	.17	1.032	803.75
Total	103,398.50	83,040.80	79,269.14	3,771.66		
Undetermined	1,431.50		1,038.39			
Total	104,830.00		80,307.53			

Uncurrent Quarters, Separated by Years.

Year.	Face value.	Weights.			Loss.	Standard weight of $1,000.
		Standard.	Net.	Abrasion.		
		Ounces.	*Ounces.*	*Ounces.*	*Per cent.*	*Ounces.*
1831	$0.25	0.21	0.20	0.01	4.761	866⅔
1833	.25	.21	.16	.05	23.809	866⅔
1835	.75	.64	.58	.06	9.375	866⅔
1836	.25	.21	.17	.04	19.047	866⅔
1837	.50	.42	.35	.07	16.666	859.375
1838	6.75	5.80	5.35	.45	7.758	859.375
1839	6.75	5.80	5.41	.39	6.724	859.375
1840	19.25	16.54	15.24	1.30	7.859	859.375
1841	21.50	18.47	17.16	1.31	7.092	859.375
1842	30.25	25.99	24.31	1.68	6.464	859.375
1843	25.75	22.12	20.74	1.38	6.238	859.375
1844	46.50	39.96	36.93	3.03	7.582	859.375
1845	23.75	20.41	18.99	1.42	6.957	859.375
1846	15.25	13.10	12.12	.98	7.480	859.375
1847	32.50	27.92	25.84	2.08	7.449	859.375
1848	5.25	4.51	4.13	.38	8.425	859.375
1849	16.50	14.17	13.06	1.11	7.833	859.375
1850	31.75	27.28	24.52	2.76	10.617	859.375
1851	7.50	6.44	5.87	.57	8.850	859.375
1852	15.25	13.10	11.33	1.77	13.511	859.375
1853	3,199.50	2,559.60	2,357.56	202.04	7.893	800
1854	3,194.25	2,555.40	2,347.75	207.65	8.125	800
1855	204.50	163.60	153.53	10.07	6.155	800
1856	1,640.75	1,312.60	1,213.62	98.98	7.540	800
1857	2,059.25	1,647.40	1,527.41	119.99	7.283	800
1858	1,555.50	1,244.40	1,154.86	89.54	7.195	800
1859	313.25	250.60	233.26	17.34	6.919	800
1860	281.25	225.00	209.11	15.89	7.062	800
1861	1,208.25	966.60	894.41	72.19	7.468	800
1862	215.00	172.00	159.21	12.79	7.436	800
1863	29.25	23.40	21.59	1.81	7.735	800
1864	16.00	12.80	11.75	1.05	8.203	800
1865	16.25	13.00	12.14	.86	6.615	800
1866	5.75	4.60	4.19	.41	8.912	800
1867	10.25	8.20	7.54	.66	8.048	800
1868	27.75	22.20	20.33	1.87	8.423	800
1869	23.75	19.00	17.30	1.70	8.947	800
1870	39.75	31.80	29.45	2.35	7.389	800
1871	68.00	54.40	50.03	4.37	8.033	800
1872	124.25	99.40	92.23	7.17	7.213	800
1873	954.00	766.77	711.79	54.98	7.170	803.75
1874	505.00	405.89	377.75	28.14	6.932	803.75
1875	3,114.50	2,503.27	2,321.70	181.57	7.253	803.75
1876	16,362.50	13,151.35	12,170.78	980.57	7.456	803.75
1877	14,300.25	11,493.82	10,679.48	814.34	7.085	803.75
1878	2,213.00	1,778.69	1,659.36	119.33	6.708	803.75
1879	37.75	30.34	28.13	2.21	7.284	803.75
1880	11.50	9.24	8.64	.60	6.493	803.75
1881	9.00	7.23	6.80	.43	5.947	803.75
1882	15.25	12.25	11.34	.91	7.428	803.75
1883	11.50	9.24	8.70	.54	5.844	803.75
1884	7.75	6.22	5.86	.36	5.787	803.75
1885	12.50	10.04	9.46	.58	5.776	803.75
1886	2.25	1.80	1.70	.10	5.555	803.75
1887	15.25	12.25	11.53	.72	5.877	803.75
1888	822.00	660.68	633.48	27.20	4.117	803.75
1889	15.00	12.05	11.56	.49	4.066	803.75
1890	101.25	81.37	78.54	2.83	3.477	803.75
1891	7,699.50	6,188.47	5,960.40	228.07	3.685	803.75
1892	200.25	160.95	153.28	7.67	4.765	803.75

UNCURRENT QUARTERS, SEPARATED BY YEARS—Continued.

Year.	Face value.	Weights.			Loss.	Standard weight of $1,000.
		Standard.	Net.	Abrasion.		
		Ounces.	*Ounces.*	*Ounces.*	*Per cent.*	*Ounces.*
1893	$110.00	88.41	85.45	2.96	3.348	803.75
1894	95.50	76.75	74.08	2.67	3.478	803.75
1895	94.75	76.15	73.92	2.23	2.928	803.75
1896	50.25	40.38	39.36	1.02	2.526	803.75
1897	71.75	57.66	56.56	1.10	1.907	803.75
1898	66.25	53.24	52.43	.81	1.521	803.75
1899	72.00	57.87	57.09	.78	1.347	803.75
1900	83.25	66.91	66.49	.42	.627	803.75
1901	19.25	15.47	15.41	.06	.387	803.75
1902	1.25	1.00	1.00			803.75
Total	61,613.25	49,485.06	46,131.80	3,353.26		
Undetermined	7,556.50		5,363.53			
Total	69,169.75		51,495.33			

UNCURRENT DIMES, SEPARATED BY YEARS.

Year.	Face value.	Weights.			Loss.	Standard weight of $1,000.
		Standard.	Net.	Abrasion.		
		Ounces.	*Ounces.*	*Ounces.*	*Per cent.*	*Ounces.*
1814	$0.10	0.08	0.05	0.03	37.500	866⅔
1820	.20	.17	.10	.07	41.175	866⅔
1821	.30	.25	.20	.05	20.000	866⅔
1823	.10	.08	.05	.03	37.500	866⅔
1824	.10	.08	.07	.01	12.500	866⅔
1825	.10	.08	.07	.01	12.500	866⅔
1826						866⅔
1827	1.10	.95	.84	.11	11.578	866⅔
1828	.10	.08	.05	.03	37.500	866⅔
1829	1.00	.86	.70	.16	18.604	866⅔
1830	.30	.25	.21	.04	16.000	866⅔
1831	.40	.34	.25	.09	26.470	866⅔
1832	1.10	.95	.80	.15	15.789	866⅔
1833	1.50	1.29	1.07	.22	17.054	866⅔
1834	.90	.77	.63	.14	18.181	866⅔
1835	3.50	3.03	2.59	.44	14.521	866⅔
1836	2.40	2.07	1.76	.31	14.975	866⅔
1837	6.70	5.75	4.92	.83	14.434	859.375
1838	30.10	25.86	22.36	3.50	13.534	859.375
1839	21.90	18.82	16.37	2.45	13.018	859.375
1840	21.70	18.64	16.45	2.19	11.718	859.375
1841	50.90	43.74	38.49	5.25	12.002	859.375
1842	54.30	46.66	40.93	5.73	12.280	859.375
1843	21.10	18.13	15.92	2.21	12.110	859.375
1844	2.20	1.89	1.44	.45	23.809	859.375
1845	32.90	28.27	24.54	3.73	13.194	859.375
1846						859.375
1847	6.90	5.92	5.06	.86	14.527	859.375
1848	9.90	8.50	7.31	1.19	14.000	859.375
1849	28.70	24.66	21.46	3.20	12.976	859.375
1850	52.80	45.37	39.71	5.66	12.475	859.375
1851	37.80	32.48	28.45	4.03	12.407	859.375
1852	46.10	39.61	34.34	5.27	13.304	859.375
1853	525.20	420.16	365.94	54.22	12.904	800
1854	219.50	175.60	153.17	22.43	12.773	800
1855	31.90	25.52	22.80	2.72	10.658	800
1856	225.20	180.16	157.19	22.97	12.749	800
1857	257.60	206.08	181.98	24.10	11.694	800
1858	94.60	75.68	66.50	9.18	12.130	800
1859	39.90	31.92	28.27	3.65	11.434	800
1860	16.70	13.36	12.02	1.34	10.029	800
1861	69.60	55.68	49.54	6.14	11.027	800
1862	36.10	29.12	25.95	3.17	10.885	800
1863	6.30	5.01	4.46	.58	11.507	800
1864	3.90	3.12	2.76	.36	11.538	800
1865	2.60	2.08	1.81	.27	12.980	800
1866	2.70	2.16	1.90	.26	12.037	800
1867	11.20	8.96	7.98	.98	10.937	800
1868	40.70	32.72	28.61	4.11	12.561	800
1869	30.80	24.64	21.92	2.72	11.038	800
1870	30.40	24.32	21.65	2.67	10.978	800
1871	77.50	62.00	55.99	6.01	9.693	800
1872	183.06	146.45	131.39	15.81	10.740	800
1873	362.50	293.12	263.37	29.76	10.945	803.75
1874	265.00	212.99	189.88	23.11	10.850	803.75

UNCURRENT DIMES, SEPARATED BY YEARS—Continued.

Year.	Face value.	Weights.			Loss.	Standard weight of $1,000.
		Standard.	Net.	Abrasion.		
		Ounces.	*Ounces.*	*Ounces.*	*Per cent.*	*Ounces.*
1875	$1,715.80	1,379.07	1,230.63	148.44	10.763	803.75
1876	2,190.20	1,760.37	1,561.19	199.18	11.314	803.75
1877	1,670.60	1,342.74	1,198.91	143.83	10.711	803.75
1878	138.00	110.91	100.22	10.69	9.638	803.75
1879	3.70	2.97	2.62	.35	11.784	803.75
1880	7.60	6.10	5.50	.60	9.836	803.75
1881	3.20	2.57	2.30	.27	10.505	803.75
1882	648.90	521.55	473.47	48.08	9.218	803.75
1883	1,192.80	958.71	873.33	85.38	8.905	803.75
1884	628.40	505.07	462.52	42.55	8.424	803.75
1885	497.20	399.62	368.29	31.33	7.839	803.75
1886	1,501.60	1,206.91	1,113.44	93.47	7.744	803.75
1887	3,755.70	3,018.64	2,795.83	222.81	7.381	803.75
1888	1,870.40	1,503.33	1,398.24	105.09	6.990	803.75
1889	2,284.00	1,835.76	1,717.40	118.36	6.447	803.75
1890	2,993.20	2,405.78	2,263.35	142.43	5.920	803.75
1891	5,619.50	4,516.67	4,263.62	253.05	5.602	803.75
1892	474.90	381.70	357.09	24.61	6.447	803.75
1893	179.00	143.87	135.52	8.35	5.803	803.75
1894	56.40	45.33	42.59	2.74	6.044	803.75
1895	37.80	30.38	28.70	1.68	5.529	803.75
1896	33.70	27.08	25.58	1.50	5.539	803.75
1897	65.40	52.56	50.50	2.06	3.919	803.75
1898	62.80	50.47	49.06	1.41	2.793	803.75
1899	80.40	64.62	63.07	1.55	2.398	803.75
1900	53.60	43.08	42.61	.47	1.090	803.75
1901	25.20	20.25	20.11	.14	.691	803.75
Total	30,701.60	24,693.38	22,721.96	1,971.42	.....	.....
Undetermined	4,188.40	.....	2,841.40	.....	.....	.....
Total	34,890.00	.....	25,563.36	.....	.....	.....

UNCURRENT TWENTY-CENT PIECES, SEPARATED, COUNTED, AND WEIGHED.

Year.	Face value.	Weights.			Loss.	Standard weight of $1,000.
		Standard.	Net.	Abrasion.		
		Ounces.	*Ounces.*	*Ounces.*	*Per cent.*	*Ounces.*
1874 1875	$3.80	3.05	2.90	0.15	4.918	803.75

UNCURRENT FIVE-CENT PIECES, SEPARATED, COUNTED, AND WEIGHED.

Year.	Face value.	Weights.			Loss.	Standard weight of $1,000.
		Standard.	Net.	Abrasion.		
		Ounces.	*Ounces.*	*Ounces.*	*Per cent.*	*Ounces.*
1834 1873	$16.45	13.22	12.20	1.02	7.715	803.75

PERCENTAGE OF ABRASION OF SUBSIDIARY SILVER COINS, IN TEN-YEAR PERIODS.

Period.	Reported by Philadelphia.			Reported by New Orleans		
	Half dollars.	Quarter dollars.	Dimes.	Half dollars.	Quarter dollars.	Dimes.
	Per cent.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
1830–1839	3.38	8.42	13.08	2.97	11.01	15.97
1840–1849	6.84	11.06	12.82	4.45	7.33	14.15
1850–1859	5.14	8.00	10.19	5.98	8.40	12.00
1860–1869	4.15	5.37	7.89	5.11	7.88	11.54
1870–1879	3.94	5.66	8.86	4.43	7.25	10.59
1880–1889	2.14	4.36	6.81	3.56	5.68	7.93
1890–1899	1.27	2.54	3.17	1.92	2.89	4.51

The investigation makes clear that the percentage of loss is greater on the smaller coins, but the comparatively small number of coins of dates earlier than 1850 that were examined makes the calculation for the earlier years of little value.

COUNTERFEIT COINAGE.

The difference between the bullion and face value of the silver and minor coins offers a constant temptation to counterfeiters, and only the activity of the Secret Service prevents their operations from assuming important proportions. The necessity for secrecy is the chief obstacle they have to encounter, for it prevents the use of an extensive plant or the best equipment, but the persistency of their efforts is shown by the number of counterfeiters detected each year and the prosecutions on this account.

The total number of spurious pieces detected by the Treasury during the year at all its offices was as follows:

One-cent pieces	96,995
Five-cent pieces	2,596
Ten-cent pieces	4,856
Twenty-five-cent pieces	5,125
Fifty-cent pieces	3,102
One-dollar pieces	1,803
Gold coins	11

This was a considerably less amount than was detected in the preceding year.

The following table shows the amount of silver coin received during each month of the year at the New York subtreasury on account of redemption and exchange and the amount of counterfeits detected in it:

COUNTERFEIT SILVER COIN DETECTED AT THE NEW YORK SUBTREASURY DURING THE FISCAL YEAR 1901–2.

Month of—	Silver coin received.				Counterfeits detected.			
	Dollars.	Halves.	Quarters.	Dimes.	Dollars.	Halves.	Quarters.	Dimes.
July	$532,476	$384,190	$750,896	$339,778	$50.00	$77.00	$85.25	$33.90
August	508,086	396,996	700,952	310,731	41.00	65.00	77.50	25.30
September	460,668	327,716	663,419	272,555	37.00	62.50	69.00	19.90
October	609,261	400,788	769,683	320,238	44.00	52.00	62.50	22.90
November	545,838	375,599	733,493	260,516	33.00	57.50	69.75	29.70
December	498,716	397,178	797,114	298,481	40.00	54.50	87.50	40.70
January	501,913	417,714	757,595	310,277	49.00	63.50	98.25	42.20
February	338,871	306,075	574,272	247,426	33.00	46.00	61.75	29.70
March	437,524	319,024	616,090	253,767	77.00	43.00	62.25	27.30
April	337,755	359,207	680,610	288,816	96.00	57.50	68.50	37.20
May	478,015	359,663	670,820	265,200	54.00	41.00	57.25	30.10
June	468,887	341,746	650,385	268,168	32.00	27.00	62.25	20.10
Total	5,718,010	4,385,896	8,365,329	3,435,953	586.00	646.50	861.75	359.00

BARS MANUFACTURED.

During the fiscal year 1902 there were manufactured by the mints and assay offices of the United States gold and silver bars of the value of $92,167,290.28, as follows:

GOLD AND SILVER BARS MANUFACTURED DURING THE FISCAL YEAR 1902.

Description.	Standard ounces.	Value.
Gold	4,733,508.301	$88,065,260.61
Silver	3,525,185.63	4,102,029.67
Total		92,167,290.28

Tables will be found in the appendix showing in detail the character of bars manufactured at each institution during the year.

WORK OF GOVERNMENT REFINERIES.

There were received and operated upon by the refineries connected with the mints at Philadelphia, San Francisco, and New Orleans, and the assay office at New York during the fiscal year 1902 gold bullion containing 2,331,818.986 standard ounces and silver bullion containing 5,031,275.47 standard ounces, of the total coining value of $49,237,253.86, as shown by the following table:

REFINERY OPERATIONS FISCAL YEAR 1902.

Institution.	Gold.		Silver.		Total value.
	Standard ounces.	Value.	Standard ounces.	Value.	
Philadelphia	608,185.622	$11,315,081.34	1,281,047.51	$1,490,673.46	$12,805,754.80
San Francisco	984,578.134	18,317,732.72	495,901.56	577,049.08	18,894,781.80
New Orleans	7,222.190	134,366.32	18,180.90	21,155.95	155,522.27
New York	731,833.040	13,615,498.42	3,236,145.50	3,765,696.57	17,381,194.99
Total	2,331,818.986	43,382,678.80	5,031,275.47	5,854,575.06	49,237,253.86

In order to show the amount of the above-mentioned silver bullion refined by the Government refineries on which amount charges were received and which was handled for parting purposes, the following table is submitted:

SILVER BULLION ON WHICH CHARGES WERE COLLECTED.

Silver bullion refined.	Philadelphia.	San Francisco.	New Orleans.	New York.	Total.
	Stand. ozs.	*Stand. ozs.*	*Stand. ozs.*	*Stand. ozs.*	*Stand. ozs.*
Bullion on which charges were collected	295,711.06	236,082.30	2,829.16		534,622.52
Silver owned by the Government returned to the refinery for parting purposes on which there were no charges	941,204.01	495,901.56	15,351.74	1,138,727.67	2,591,184.98
Total	1,236,915.07	731,983.86	18,180.90	1,138,727.67	3,125,807.50

The figures given above represent the amount of silver received by the melter and refiner and charged to the refinery, but as it was used over and over, it does not represent the whole amount of silver used or sent to the refinery.

PURCHASE OF SILVER.

The repeal on November 1, 1893, of the purchasing clause of the act of July 14, 1890, limited the purchase of silver bullion to that contained in deposits of gold bullion fractions of silver deposited for return in fine bars, the amount retained in payment for charges on silver deposits, surplus bullion returned by the operative officers at the close of the fiscal year, and uncurrent domestic silver coin.

The following table shows the amount and cost of silver bullion purchased for the subsidiary silver coinage during the fiscal year ended June 30, 1902:

SILVER PURCHASES FOR SUBSIDIARY COINAGE DURING THE FISCAL YEAR 1902.

Stock.	Standard ounces.	Cost.
Partings, charges, and fractions purchased	632,089.75	$324,893.57
Porto Rican coins redeemed and melted	194.31	148.50
Melted domestic assay coins purchased	766.98	908.42
Mutilated domestic coins purchased	1,725.16	870.89
Surplus bullion purchased	30,631.96	15,705.26
Total	665,408.16	342,526.74

QUANTITY AND COST OF SILVER PURCHASED FOR SUBSIDIARY COINAGE AT EACH MINT AND AT THE NEW YORK ASSAY OFFICE DURING THE FISCAL YEAR 1902.

Institution.	Standard ounces.	Cost.
Mint at Philadelphia	207,584.58	$106,550.03
Mint at San Francisco	230,288.64	121,324.30
Mint at New Orleans	42,090.17	20,919.68
Assay office at New York	185,444.77	93,732.73
Total	665,408.16	342,526.74

In the following table are shown the amount and cost of silver for the subsidiary coinage, the sources from which the metal was obtained, the coinage derived, and seigniorage on same during the fiscal year 1902:

QUANTITY AND COST OF SILVER OBTAINED BY TRANSFER AND PURCHASE FOR SUBSIDIARY SILVER COINAGE, AMOUNT AND COST USED IN COINAGE, COINAGE DERIVED THEREFROM, AND SEIGNIORAGE ON SAME, DURING THE FISCAL YEAR ENDED JUNE 30, 1902.

Sources from which bullion was obtained.	Standard ounces.	Cost.	Standard ounces used in coinage.	Cost.	Coinage.	Seigniorage.
MINT AT PHILADELPHIA.						
Uncurrent coins transferred from Treasury	1,651,097.68	$2,054,242.83	712,122.50	$886,000.00	$886,000.00	.....
Amount transferred from act of July 14, 1890	2,801,872.50	2,281,606.93	2,801,872.50	2,281,606.93	3,486,000.00	$1,204,393.07
Porto Rican coins redeemed and melted	194.31	148.50	1,696,079.89	1,282,462.53	2,110,208.25	827,745.72
Partings, charges, and fractions purchased	186,950.78	94,808.04				
Melted assay coins purchased	766.98	908.42	546.55	805.28	680.00	374.72
Mutilated coins purchased	1,281.27	652.11				
Surplus bullion purchased	18,391.24	10,032.93				
Total	4,660,554.76	4,442,399.79	5,210,621.44	4,450,374.74	6,482,888.25	2,032,513.51

QUANTITY AND COST OF SILVER OBTAINED BY TRANSFER AND PURCHASE FOR SUBSIDIARY SILVER COINAGE—Continued.

Sources from which bullion was obtained.	Standard ounces.	Cost.	Standard ounces used in coinage.	Cost.	Coinage.	Seigniorage.
MINT AT SAN FRANCISCO.						
Uncurrent coins transferred from Treasury	104,738.28	$130,312.00	168,531.28	$209,681.20	$209,681.20	
Amount transferred from act of July 14, 1890	489,483.75	398,593.48	489,483.75	398,593.48	609,000.00	$210,406.52
Partings, charges, and fractions purchased	228,914.02	120,648.51	528,867.50	287,902.37	658,000.00	370,097.63
Mutilated coins purchased	150.60	71.04				
Surplus bullion purchased	1,224.02	604.75				
Total	824,510.67	650,229.78	1,186,882.53	896,177.05	1,476,681.20	580,504.15
MINT AT NEW ORLEANS.						
Uncurrent coins transferred from Treasury	769,183.30	956,993.21	685,598.75	853,000.00	853,000.00	
Uncurrent coins transferred from mint at Philadelphia	321,500.00	400,000.00				
Amount transferred from act of July 14, 1890	1,527,928.75	1,244,215.24	1,527,928.75	1,244,215.24	1,901,000.00	656,784.76
Partings, charges, and fractions purchased	41,783.51	20,765.82				
Mutilated coins purchased	293.29	147.71				
Surplus bullion purchased	13.37	6.15				
Total	2,660,702.22	2,622,128.13	2,213,527.50	2,097,215.24	2,754,000.00	656,784.76
SUMMARY.						
Uncurrent coins transferred from Treasury	2,525,019.26	3,141,548.04	1,566,252.53	1,948,681.20	1,948,681.20	
Uncurrent coins transferred from mint at Philadelphia to mint at New Orleans	321,500.00	400,000.00				
Amount transferred from act of July 14, 1890	4,819,285.00	3,924,415.65	4,819,285.00	3,924,415.65	5,996,000.00	2,071,584.35
Porto Rican coins redeemed and melted	194.31	148.50	1,696,079.89	1,282,462.53	2,110,208.25	827,745.72
Partings, charges, and fractions purchased	457,648.31	236,222.37	529,414.05	288,207.65	658,680.00	370,472.35
Melted assay coins purchased	766.98	908.42				
Mutilated coins purchased	1,725.16	870.89				
Surplus bullion purchased	19,628.63	10,643.83				
Total	8,145,767.65	7,714,757.70	8,611,031.47	7,443,767.03	10,713,569.45	3,269,802.42

The total available stock of silver for the subsidiary coinage, the cost, the amount used in coinage during the fiscal year, and balance on hand June 30, 1902, are set forth by institutions in the following table:

SILVER FOR SUBSIDIARY COINAGE, FISCAL YEAR 1902.

Stock.	Standard ounces.	Cost.
MINT AT PHILADELPHIA.		
Silver bullion on hand July 1, 1901	2,789,660.27	$2,478,513.86
Uncurrent coins transferred from Treasury	1,651,097.68	2,054,242.83
Partings, charges, and fractions purchased	166,950.78	94,808.04
Amount transferred from act of July 14, 1890	2,801,872.50	2,281,606.93
Porto Rican coins redeemed and melted	194.31	148.50
Melted assay coins purchased	766.98	908.42
Mutilated coins purchased	1,281.27	652.14
Surplus bullion purchased	18,391.24	10,032.93
Total	7,450,215.03	6,920,913.65

SILVER FOR SUBSIDIARY COINAGE, FISCAL YEAR 1902—Continued.

Stock.	Standard ounces.	Cost.
MINT AT PHILADELPHIA—continued.		
Used in coinage, fiscal year 1902	5,210,621 44	$4,450,374.74
Uncurrent coins transferred to mint at New Orleans	321,500.00	400,000.00
Sold in sweeps	8,934.36	5,047.32
Wasted by operative officers	10,784.74	5,960.48
Balance on hand July 1, 1902	1,898,374.49	2,059,581.11
Total	7,450,215.03	6,920,913.65
MINT AT SAN FRANCISCO.		
Silver bullion on hand July 1, 1901	401,949.09	265,913.01
Uncurrent coins transferred from Treasury	104,738.28	130,312.00
Partings, charges, and fractions purchased	228,914.02	120,648.51
Amount transferred from act of July 14, 1890	489,483.75	398,593.48
Mutilated coins purchased	150.60	71.04
Surplus bullion purchased	1,224.02	604.75
Total	1,226,459.76	916,142.79
Used in coinage, fiscal year 1902	1,186,882.53	896,177.05
Sold in sweeps	6,431.48	3,510.76
Wasted by operative officers	1,857.04	993.59
Balance on hand July 1, 1902	31,288.71	15,461.39
Total	1,226,459.76	916,142.79
MINT AT NEW ORLEANS.		
Silver bullion on hand July 1, 1901	192,390.50	239,366.02
Uncurrent coins transferred from Treasury	769,183.30	956,993.21
Partings, charges, and fractions purchased	41,783.51	20,765.82
Amount transferred from act of July 14, 1890	1,527,928.75	1,244,215.24
Uncurrent coins received from mint at Philadelphia	321,500.00	400,000.00
Mutilated coins purchased	293.29	147.71
Surplus bullion purchased	13.37	6.15
Total	2,853,092.72	2,861,494.15
Used in coinage, fiscal year 1902	2,213,527.50	2,097,215.24
Sold in sweeps	27,596.98	13,983.70
Wasted by operative officers	14,479.48	6,929.41
Balance on hand July 1, 1902	597,488.76	743,365.80
Total	2,853,092.72	2,861,494.15
SUMMARY.		
Silver bullion on hand July 1, 1901	3,383,999.86	2,983,792.89
Uncurrent coins transferred from Treasury	2,525,019.26	3,141,548.04
Partings, charges, and fractions purchased	457,648.31	236,222.37
Amount transferred from act of July 14, 1890	4,819,285.00	3,924,415.65
Uncurrent coins transferred from mint at Philadelphia to mint at New Orleans	321,500.00	400,000.00
Porto Rican coins redeemed and melted	194.31	148.50
Melted assay coins purchased	766.98	908.42
Mutilated coins purchased	1,725.16	870.89
Surplus bullion purchased	19,628.63	10,643.83
Total	11,529,767.51	10,698,550.59
Used in coinage, fiscal year 1902	8,611,031.47	7,443,767.03
Uncurrent coins transferred from mint at Philadelphia to mint at New Orleans	321,500.00	400,000.00
Sold in sweeps	42,962.82	22,541.78
Wasted by operative officers	27,121.26	13,883.48
Balance on hand July 1, 1902	2,527,151.96	2,818,358.30
Total	11,529,767.51	10,698,550.59

The amount and cost of silver purchased under act of July 14, 1890, the amount of such bullion consumed in the coinage of standard silver dollars, the number of dollars coined, and seigniorage derived therefrom, from August 13, 1890 (date when law went into effect), to June 30, 1902, together with the amount of such bullion used in the coinage

of subsidiary coins under provisions of the act of March 14, 1900, with the coinage and seigniorage on same, are exhibited in the following table:

AMOUNT AND COST OF SILVER BULLION PURCHASED UNDER ACT OF JULY 14, 1890, AND USED IN THE COINAGE OF STANDARD SILVER DOLLARS AND SUBSIDIARY SILVER COIN, WASTED AND SOLD IN SWEEPS, AND SEIGNIORAGE ON SAME, FROM AUGUST 13, 1890, TO JUNE 30, 1902.

Disposition.	Fine ounces.	Cost.
Total amount purchased and cost of same	168,674,682.53	$155,931,002.25
Used in coinage of standard silver dollars to June 30, 1902	122,939,901.69	114,545,740.49
Used in coinage of subsidiary silver to June 30, 1902	12,452,497.92	11,266,619.39
Wasted and sold in sweeps	63,570.37	62,535.64
Transferred to subsidiary silver purchase account	.31	.25
Total amount used	135,455,970.29	125,874,895.77
Balance on hand June 30, 1902	33,218,712.24	30,056,106.48
Total	168,674,682.53	155,931,002.25

	Coinage.	Seigniorage.
Standard silver dollars coined to June 30, 1902	$158,952,600.00	$44,406,859.51
Subsidiary silver coined to June 30, 1902	17,214,443.30	5,947,823.91

BALANCE OF SILVER BULLION PURCHASED UNDER ACT OF JULY 14, 1890, ON HAND AT EACH MINT AND THE NEW YORK ASSAY OFFICE, JUNE 30, 1902.

Institution.	Fine ounces.	Cost.
Mint at Philadelphia	26,955,338.44	$24,389,041.83
Mint at San Francisco	1,081,976.60	978,965.27
Mint at New Orleans	4,918,488.04	4,450,220.53
Assay office at New York	262,909.16	237,878.85
Total	33,218,712.24	30,056,106.48

BALANCES OF SILVER BULLION.

The balances of silver bullion on hand July 1, 1902, at the mints and assay offices of the United States, for the coinage of standard silver dollars, subsidiary silver coins, and for payment of deposits of silver bullion in fine bars, were as follows:

Items.	Standard ounces.	Cost.
Purchased under act of July 14, 1890	36,909,680.26	$30,056,106.48
For subsidiary silver coinage at mints and assay offices	2,542,040.82	2,825,361.11
At United States assay office, New York, for payment of deposits in fine bars	492,952.20	279,178.42
Total	39,944,673.28	33,160,646.01

MARKET PRICE OF SILVER DURING THE FISCAL YEAR ENDED JUNE 30, 1902.

For the twelve months ending June 30, 1902, the price for silver, 0.925 fine (British standard), ranged from $23\frac{5}{16}$ d. to $27\frac{1}{4}$ d., the average price being 25.606 d. At the lowest price the equivalent for an ounce, fine, in United States money, was $0.51088; the highest, $0.59735, and at

the average price, $0.56125. At the lowest price the bullion value of the standard silver dollar was $0.39513; at the highest price, $0.46201, and at the average price, $0.43413.

During the year ending June 30, 1902, the silver market was very weak. There was a reduced demand for India and China and but light demand for European coinage purposes.

HIGHEST, LOWEST, AND AVERAGE PRICE OF SILVER BULLION AND VALUE OF A FINE OUNCE EACH MONTH DURING THE FISCAL YEAR 1902.

Month.	Highest.	Lowest.	Average price per ounce, British standard, 0.925.	Equivalent value of a fine ounce, with exchange at par ($4.8665).	Average monthly price at New York of exchange on London.	Equivalent value of a fine ounce, based on average monthly price and average rate of exchange.	Average monthly New York price of fine bar silver.
1901.	*Pence.*	*Pence.*	*Pence.*				
July	27 1/2	26 13/16	26.9629	$0.59107	$4.8752	$0.59209	$0.59423
August	27 1/2	26 3/4	26.9375	.59050	4.8731	.59130	.59217
September	27	26 7/8	26.9650	.59110	4.8538	.58949	.58978
October	26 7/8	26 3/8	26.6157	.58344	4.8623	.58294	.58356
November	26 1/2	25 3/4	26.0913	.57150	4.8752	.57360	.57400
December	25 3/4	24 15/16	25.4475	.55783	4.8698	.55820	.55790
1902.							
January	26 1/16	25 3/8	25.6250	.56173	4.8716	.56231	.56302
February	25 1/2	25 5/16	25.4140	.55711	4.8749	.55806	.55833
March	25 7/16	24 13/16	25.0078	.54820	4.8773	.54938	.54923
April	24 3/8	23 5/16	24.3221	.53316	4.8788	.53449	.53452
May	24 1/8	23 5/16	23.6990	.51950	4.8731	.52021	.52000
June	24 7/16	23 1/8	24.1850	.53016	4.8764	.53122	.52535
Total			25.6060	.56125	4.8718	.55117	.56184

HIGHEST, LOWEST, AND AVERAGE PRICE OF SILVER BULLION AND VALUE OF A FINE OUNCE EACH MONTH DURING THE CALENDAR YEAR 1901.

Month.	Highest.	Lowest.	Average price per ounce, British standard, 0.925.	Equivalent value of a fine ounce with exchange at par, $4.8665.	Average monthly price at New York of exchange on London.	Equivalent value of a fine ounce, based on average monthly price and average rate of exchange.	Average monthly New York price of fine bar silver.
	Pence.	*Pence.*	*Pence.*				
January	29 9/16	27 3/4	28.9735	$0.63513	$4.8724	$0.63582	$0.63485
February	28 7/16	27 7/8	28.1592	.61728	4.8780	.61858	.61693
March	28 1/4	27 5/8	27.9495	.61268	4.8778	.61422	.61336
April	27 13/16	26 15/16	27.2925	.59828	4.8817	.60014	.60033
May	27 5/8	27 3/16	27.4189	.60105	4.8815	.60366	.60394
June	27 5/8	27 1/2	27.4200	.60107	4.8820	.60298	.60335
July	27 1/2	26 13/16	26.9629	.59107	4.8752	.59209	.59423
August	27 1/2	26 3/4	26.9375	.59050	4.8731	.59130	.59217
September	27	26 7/8	26.9650	.59110	4.8485	.58949	.58978
October	26 7/8	26 3/8	26.6157	.58344	4.8623	.58294	.58356
November	26 1/2	25 3/4	26.0913	.57150	4.8752	.57360	.57400
December	25 3/4	24 15/16	25.4475	.55783	4.8698	.55820	.55790
Average			27.1861	.59595	4.8731	.59691	.59703

DISTRIBUTION OF SILVER DOLLARS.

During the fiscal year 1902 the number of silver dollars distributed from the mints was 8,739,511, against 2,145,573 during the fiscal year 1901, an increase in the distribution of these pieces during the fiscal year 1902 of 6,593,938.

The number of silver dollars on hand, the amount transferred, the coinage, and the distribution from each mint is shown in the following table:

DISTRIBUTION OF SILVER DOLLARS FROM THE MINTS, FISCAL YEAR 1902.

Items.	Philadelphia.	San Francisco.	New Orleans.	Total.
	Dollars.	*Dollars.*	*Dollars.*	*Dollars.*
In mints June 30, 1901	86,075,954	55,977,333	15,823,500	157,876,787
Transferred from Treasury for storage	500,000	150,000		650,000
Coinage, fiscal year 1902	8,196,800	436,000	10,770,000	19,402,800
Total	94,772,754	56,563,333	26,593,500	177,929,587
In mints June 30, 1902	94,352,954	55,804,122	18,033,000	168,190,076
Distributed from mints	419,800	759,211	8,560,500	9,739,511

THE CIRCULATION OF SILVER DOLLARS.

The following table exhibits the total number of silver dollars coined, the number held by the Treasury for the redemption of certificates and Treasury notes, the number held in excess of outstanding certificates, and the number in circulation since November 1, 1886:

COINAGE, OWNERSHIP, AND CIRCULATION OF SILVER DOLLARS.

Date.	Total coinage.	In the Treasury.		In circulation.
		Held for payment of certificates outstanding.	Held in excess of certificates outstanding.	
1886 (November 1)	244,433,386	100,306,800	82,624,431	61,502,155
1887 (November 1)	277,110,157	160,713,957	53,461,575	62,934,625
1888 (November 1)	309,750,890	229,783,152	20,196,288	59,771,450
1889 (November 1)	343,638,001	277,319,944	6,219,577	60,098,480
1890 (November 1)	380,988,466	308,206,177	7,072,725	65,709,564
1891 (November 1)	409,475,368	321,142,642	26,197,265	62,135,461
1892 (November 1)	416,412,835	324,552,532	30,187,848	61,672,455
1893 (November 1)	419,332,550	325,717,232	34,889,500	58,725,818
1894 (November 1)	421,776,408	331,143,301	34,189,437	56,443,670
1895 (November 1)	423,289,309	342,409,504	22,525,713	58,354,092
1896 (November 1)	439,552,141	366,163,504	14,897,835	58,190,802
1897 (November 1)	452,713,792	372,838,919	19,678,095	60,196,778
1898 (November 1)	466,836,597	398,753,504	4,645,838	63,437,255
1899 (July 1)	480,251,231	406,085,504	10,783,976	63,381,751
1900 (July 1)	498,496,215	416,015,000	15,826,299	66,654,916
1901 (July 1)	522,795,065	435,014,000	18,688,931	69,092,134
1902 (July 1)	542,197,865	453,997,000	17,430,812	70,770,053

SEIGNIORAGE ON SILVER COINAGE.

The balance of profits on the coinage of silver on hand in the mints June 30, 1901, was $330,603.76.

The total seigniorage on the coinage of silver during the fiscal year 1902 was $9,094,485.86, of which $5,824,683.44 was from the coinage of standard silver dollars; $2,442,056.70 from the coinage of subsidiary silver coin, and $827,745.72 from the recoinage of Porto Rican silver coins into United States subsidiary coins.

Including the balance on hand at the mints July 1, 1878, the *net* seigniorage on silver coined, from that date to June 30, 1902, aggregated $121,756,519.84.

The seigniorage on standard silver dollars, under the act of July 14, 1890, from August 13, 1890 (the date the act went into effect), to June 30, 1902, was $44,406,859.51.

The amount of seigniorage deposited in the Treasury during the fiscal year was $9,328,265.64, leaving a balance on hand at the mints on June 30, 1902, of $96,823.98.

A table showing the seigniorage on silver coinage at each mint and the disposition of the same will be found in the appendix.

APPROPRIATIONS AND EXPENDITURES.

The act approved March 3, 1901, making appropriations for the legislative, executive, and judicial expenses of the Government for the fiscal year ending June 30, 1902, contained specific appropriations for the support of the mints and assay offices of the United States, amounting in the aggregate to $1,183,450.

Additional appropriations were secured to supply deficiencies by act approved February 14, 1902, as follows:

Wages of workmen, mint at San Francisco	$2,000
Contingent expenses, assay office at Seattle	2,000

Act approved June 6, 1900, contained the following specific appropriations:

New machinery and appliances, mint at Philadelphia	$440,185
New machinery and appliances, mint at Denver	25,000

The expenditures from these appropriations to June 30, 1902, were as follows:

Mint at Philadelphia	$349,720.84
Mint at Denver	1,790.73

In addition to the expenditures from the specific appropriations, there were expended during the year the following amounts from the general appropriation, contained in act of July 14, 1890:

Storage of silver bullion (all expended at mint at Philadelphia)		$31,059.05
Coinage of silver bullion:		
Mint at Philadelphia	$24,194.54	
Mint at San Francisco	5,127.79	
Mint at New Orleans	183,224.50	
		212,546.83

Appropriations and Expenditures, Fiscal Year 1902.

APPROPRIATIONS.

Institution.	Salaries.	Wages of workmen.	Contingent expenses.	Storage of silver bullion.	Coinage of silver bullion.	Total.
Philadelphia	[a]$42,050.00	[b]$450,037.38	$100,080.37			$592,167.75
San Francisco	41,100.00	177,000.00	60,000.00			278,100.00
New Orleans	31,950.00	30,000.00	15,000.00			76,950.00
Carson	5,000.00	5,600.00	2,500.00			13,100.00
New York	39,250.00	27,500.00	10,000.00			76,750.00
Denver	15,250.00	22,000.00	7,000.00			4,250.00
Helena	7,250.00	14,000.00	4,000.00			25,250.00
Boise	3,400.00	8,300.00	3,750.00			15,450.00
Charlotte	2,750.00	1,080.00	920.00			4,750.00
St. Louis	3,000.00	1,000.00	750.00			4,750.00
Deadwood	3,200.00	4,600.00	2,250.00			10,050.00
Seattle	10,000.00	27,000.00	9,000.00			46,000.00
Total	204,200.00	768,117.38	215,250.37			1,187,567.75

[a] Includes $13 charges received for manufacturing copper colanders for mint at New Orleans, and $24.38 charges received for manufacturing iron work for trucks for mint at San Francisco.

[b] Includes $64.75 charges received for manufacturing copper colanders for mint at New Orleans, and $15.62 charges received for manufacturing iron work for trucks for mint at San Francisco.

APPROPRIATIONS AND EXPENDITURES, FISCAL YEAR 1902—Continued.

EXPENDITURES.

Institution.	Salaries.	Wages of workmen.	Contingent expenses.	Storage of silver bullion.	Coinage of silver bullion.	Total.
Philadelphia	$41 885.16	$448,921.80	$81,040.71	$31,059.05	$24,194.54	$627,101.26
San Francisco	40,709.73	176,813.25	46,960.43		5,127.79	269,611.20
New Orleans	30,700.00	29,679.73	14,600.36		183,224.50	258,204.59
Carson	5,000.00	5,500.00	2,218.26			12,718.26
New York	39,250.00	27,089.50	9,756.18			76,095.68
Denver	15,250.00	21,783.40	5,393.35			42,426.75
Helena	7,250.00	13,953.50	3,955.37			25,158.87
Boise	3,400.00	7,154.20	3,066.29			13,620.49
Charlotte	2,750.00	1,080.00	916.70			4,746.70
St. Louis	3,000.00	1,000.00	369.77			4,369.77
Deadwood	3,200.00	3,665.00	1,841.64			8,706.64
Seattle	10,000.00	27,000.00	9,000.00			46,000.00
Total	202,394.89	763,640.38	179,119.06	31,059.05	212,546.83	1,388,760.21

EARNINGS AND EXPENDITURES OF THE REFINERIES OF THE COINAGE MINTS AND THE ASSAY OFFICE AT NEW YORK DURING THE FISCAL YEAR ENDED JUNE 30, 1902.

The earnings of the refineries comprised the following items: Charges received for parting and refining bullion, $187,099.66; surplus bullion recovered, $56,101.98; amount received from sale of by-products, $16,777.55, making the total earnings for the fiscal year $259,979.19, which amount was deposited in the Treasury to the credit of the appropriation for "Parting and refining bullion."

The expenditures on account of "Parting and refining bullion" during the year aggregated $209,805.18, showing a net excess of earnings over expenditures of $50,174.01.

In the following table are shown the earnings and expenditures on account of parting and refining bullion at the coinage mints and assay office at New York during the fiscal year:

EARNINGS AND EXPENDITURES FOR PARTING AND REFINING BULLION FOR THE FISCAL YEAR ENDED JUNE 30, 1902.

Institution.	Earnings.				Expenditures.	Excess of receipts over expenditures.
	Charges.	Surplus bullion.	By-products.	Total.		
Philadelphia	$43,606.95	$20,698.64		$64,305.59	$46,224.32	$18,081.27
San Francisco	52,277.74	24,750.21	$6,447.99	83,475.94	57,214.30	26,261.64
New Orleans	1,793.46	779.27		2,572.73	954.39	1,618.34
New York	89,421.51	9,873.86	10,329.56	109,624.93	105,412.17	4,212.76
Total	187,099.66	56,101.98	16,777.55	259,979.19	209,805.18	50,174.01
Net excess of receipts						50,174.01

APPROPRIATIONS AND EXPENDITURES OF THE OFFICE OF THE DIRECTOR OF THE MINT FOR THE FISCAL YEAR 1902.

The act approved March 3, 1901, making appropriations for the legislative, executive, and judicial expenses of the Government for the fiscal year ending June 30, 1902, contained appropriations for the office of the Director of the Mint aggregating $36,960.

The expenditures from these appropriations comprised the amounts paid on account of salaries, supervising the annual settlements at the

mints and assay offices, expenses incurred in collecting and compiling the statistics of the production of gold and silver in the United States, the amount paid for incidental expenses and the purchase of and subscription to books and pamphlets, and contingent expenses incurred in support of the laboratory of the Bureau.

These expenditures aggregated $34,341.82, leaving an unexpended balance of $2,618.18 to the credit of the several appropriations.

In addition to the above appropriations for the support of the office of the Director of the Mint the provisions of the same act contained a specific appropriation of $100,000 for "Freight on bullion and coin between mints and assay offices."

The expenditures from this appropriation for the fiscal year aggregated $66,964.01, leaving an unexpended balance of $33,035.99 to the credit of said appropriation.

Purpose for which appropriated.	Appropriated.	Expended.	Unexpended.
Salaries	$29,560.00	$28,490.80	$1,069.20
Examination of mints	2,500.00	2,418.29	81.71
Mining statistics	3,500.00	3,110.90	389.10
Books, pamphlets, and incidental expenses	400.00	217.55	182.45
Laboratory	1,000.00	104.28	895.72
Freight on bullion and coin between mints and assay offices	100,000.00	66,964.01	33,035.99
Total	136,960.00	101,305.83	35,654.17

EARNINGS AND EXPENDITURES OF THE MINTS AND ASSAY OFFICES.

The amount received for charges at the several institutions for parting and refining bullion was $187,099.66; for copper alloy, $10,920.61; and for assaying and stamping, $45,490.16.

The seigniorage on the coinage of standard silver dollars was $5,824,683.44; on subsidiary silver coinage, $2,442,056.70; and on the recoinage of Porto Rican silver coins into United States subsidiary coins, $827,745.72; a total seigniorage on silver coinage of $9,094,485.86.

The seigniorage on minor coinage was $1,912,951.29; on recoinage of uncurrent minor coins, $6,415.40; and on the recoinage of Porto Rican bronze coins into United States bronze coins, $3.56; a total seigniorage on minor coinage of $1,919,370.25.

The profits from the sale of medals and proof coins were $1,710.88, and the charges received for mounting and expressage on the same were $347.93.

Deposit melting-room grains and sweeps, valued at $14,645.67, and surplus bullion, valued at $56,101.98, were recovered by the officers of the different institutions.

The gain on bullion shipped by the minor assay offices to the mints for coinage was $10,803.71.

The proceeds from the sale of old material were $10,462.83; from special assays of bullion and ore, $3,467; and from the sale of by-products, $16,777.55.

The receipts for manufacturing appliances for mints were $117.75.

The total amount of earnings and gains of the mints and assay offices during the fiscal year 1902 was $11,371,802.66.

The expenditures of the mint service were: For salaries of officers and clerks, $202,394.89; for wages, contingent expenses, parting and refining expenses, wastage and loss on sale of sweeps, $1,396,179.50.

The expense of distributing minor coins was $40,222.01, and the amount paid for charges and mounting medals was $347.93.

The loss on bullion shipped the mint for coinage was $94.49, while the loss on the recoinage of minor coins was $10,959.37, a total expenditure of $1,650,189.19.

The net earnings for the fiscal year were $9,721,613.47.

CLASSIFIED STATEMENT OF EXPENDITURES.

The expenditures of the mints and assay offices and of the refineries connected therewith for supplies and on account of salaries and wages of workmen during the fiscal year ended June 30, 1902, are exhibited in the following table:

CONSOLIDATED STATEMENT OF EXPENDITURES FOR SALARIES, WAGES, AND SUPPLIES OF THE MINTS AND ASSAY OFFICES OF THE UNITED STATES DURING THE FISCAL YEAR ENDED JUNE 30, 1902.

Items of expenditure.	Ordinary expenses.	Refining expenses.	Total.
Acids	$1,860.85	$40,480.71	$42,341.56
Advertisements for supplies	506.53		506.53
Assayers' balances, weights, and scales	208.70	195.00	403.70
Assayers' materials	1,950.07		1,950.07
Barrels, lard tierces, copper-lined and bullion boxes	948.47	879.80	1,828.27
Belting	812.04		812.04
Charcoal	1,827.20	763.15	2,590.35
Chemicals	1,856.35	734.20	2,590.55
Coal	15,124.62	4,759.45	19,884.07
Coke	4,261.98	1,002.50	5,264.48
Copper	34,213.50	15,892.26	50,105.76
Crucibles, covers, stirrers, and dippers	10,103.97	6,591.71	16,695.68
Dry goods	4,400.91	978.02	5,378.93
Electric light and supplies	2,185.58		2,185.58
Electric power	2,539.95	35.85	2,575.80
Fire brick	1,027.57	346.70	1,374.27
Fluxes	2,280.78	3,609.57	5,890.35
Freight and drayage	15,845.72	398.95	16,244.67
Furnaces	952.55		952.55
Gas	10,062.96	3,074.60	13,137.56
Gloves and gauntlets	9,070.95	609.56	9,680.51
Hardware	1,830.84	183.77	2,014.61
Ice	1,282.76	264.18	1,546.94
Iron and steel	1,930.04	85.48	2,015.52
Labor and repairs	12,207.55	3,155.76	15,363.31
Laundering of towels, etc	2,541.29	49.80	2,591.09
Lead, sheet, and lead pipe	409.20	1,611.91	2,021.11
Loss on sale of sweeps and leady melts	7,079.87	8,612.39	15,692.26
Lumber	3,766.15	338.69	4,104.84
Machinery and appliances	10,457.29	1,161.01	11,618.30
Metal work and castings	3,621.19	2,702.64	6,323.83
Oils	4,630.77	190.27	4,821.04
Salt	3.40	577.64	581.04
Sewing	4,982.83	403.15	5,385.98
Stationery, printing, and binding	1,344.62		1,344.62
Steam, supply of	5,583.73	6,718.20	12,301.93
Sundries	20,560.48	234.22	20,794.70
Telegraphing	193.00		193.00
Telephone	1,540.33	19.55	1,559.88
Tools	1,061.28	43.81	1,105.09
Water	3,204.91	275.20	3,480.11
Wood	4,525.92	289.80	4,815.72
Zinc	56.62	2,724.69	2,781.31
Bills paid at department	6,421.07		6,421.07
Rent for buildings	2,739.96		2,739.96
Wastage	11,597.67		11,597.67
Naphtha	5,129.16		5,129.16
Total	243,743.18	109,994.19	353,737.37
Salaries	202,394.89		202,394.89
Wages of workmen	942,622.14	99,810.99	1,042,433.13
Grand total	1,388,760.21	209,805.18	1,598,565.39

IMPORTS AND EXPORTS OF THE PRECIOUS METALS.

GOLD IMPORTS.—The total value of gold imported into the United States during the fiscal year 1902, as shown by the customs service and reported by the Bureau of Statistics, was $52,021,254.

Foreign gold bullion of the value of $10,496,745 was entered, of which amount $5,335,662 came from Mexico, $2,647,812 from Canada, $243,358 from Great Britain, $513,902 from Australasia, and the remainder from various countries.

Foreign gold coin of the value of $12,838,592 was imported, of which $9,976,365 came from Australasia, $1,353,700 from Japan, $593,850 from Cuba, $434,250 from France, $337,317 from Canada, and the remainder from various countries.

The value of gold contained in ore and base bullion imported was $24,815,597, of which amount $21,215,943 came from Canada, $3,118,712 from Mexico, $4,100 from Japan, and the remainder from Central and South America.

There were returned to the United States domestic gold coins of the value of $3,870,320, of which $1,406,591 came from Canada, $974,747 from Germany, $326,853 from Mexico, $170,000 from Cuba, and the remainder from various countries:

The total imports were as follows.

GOLD IMPORTS FISCAL YEAR 1902.

Items.	Value.
Foreign bullion	$10,496,745
Foreign coin	12,838,592
Gold contained in ore	24,815,597
Total foreign	48,150,934
United States coin	3,870,320
Total imports	52,021,254

GOLD EXPORTS.—The total value of gold exported from the United States during the fiscal year was $48,568,950, which includes domestic and foreign gold.

Domestic gold bullion, composed almost entirely of bars manufactured by the United States Government, valued at $36,333,779, was exported, all of which went to France, Germany, and Austria-Hungary.

The exports of foreign gold bullion amounted to $266,215, of which $241,715 went to England and $24,500 to British Columbia.

The exports of domestic gold coin were valued at $9,370,841, of which $4,707,780 went to Canada, $2,400,000 to Germany, $285,000 to England, $521,850 to West Indies, $1,000,000 to Uruguay, $322,464 to Venezuela, $52,300 to Mexico, and the remainder to various countries.

The exports of foreign coin amounted to $758,730, of which $401,675 went to Cuba, $228,484 to France, $102,296 to Bermuda, and the remainder to various countries.

Gold contained in domestic ores exported was valued at $186,587, of which $125,574 went to England, $36,113 to British Columbia, and $24,900 to Germany.

Gold contained in foreign ores exported was valued at $783,567, of which $782,317 went to British Columbia and $250 to England.

The gold exports were as follows:

GOLD EXPORTS FISCAL YEAR 1902.

Items.	Value.
Domestic bullion (United States mint or assay office bars)	$36,333,779
Other domestic bullion	870,231
Domestic coin	9,370,841
Gold contained in ore	186,587
Total domestic	46,761,438
Foreign bullion reexported	$266,215
Foreign coin	758,730
Foreign ore reexported	782,567
Total foreign	1,807,512
Total gold exports	48,568,950

The *net* exports of United States gold coin from January 1, 1870, to June 30, 1902, was $604,841,010, as shown by the following table:

IMPORTS AND EXPORTS OF UNITED STATES GOLD COIN.

Period.	Imports.	Exports.	Period.	Imports.	Exports.
Jan. 1 to July 1, 1870		$6,384,250	Fiscal year—		
Fiscal year—			1888	$5,181,512	$3,211,399
1871		55,491,719	1889	1,403,619	4,143,939
1872		40,391,357	1890	1,949,552	3,951,736
1873		35,661,863	1891	2,824,146	67,704,900
1874		28,766,943	1892	15,432,443	42,841,963
1875		59,309,770	1893	6,074,899	101,844,087
1876		27,542,861	1894	30,790,892	64,303,840
1877		21,274,565	1895	10,752,673	55,096,639
1878	$7,325,783	6,427,251	1896	10,189,614	77,789,892
1879	3,654,859	4,120,311	1897	57,728,857	23,646,565
1880	18,207,559	1,687,973	1898	40,590,947	8,402,216
1881	7,577,422	1,741,364	1899	7,779,123	27,425,587
1882	4,796,630	29,805,289	1900	8,659,856	30,674,511
1883	8,112,265	4,802,454	1901	3,311,105	8,425,947
1884	3,824,692	12,242,021	1902	3,870,320	9,370,841
1885	3,352,090	2,345,809			
1886	1,687,231	5,400,976	Total	270,940,598	875,781,608
1887	5,862,509	3,550,770	Net exports		604,841,010

SILVER IMPORTS.—The total value of silver imports during the fiscal year was $28,232,254.

During the year there was imported 12,074,764 ounces of foreign bullion, of the commercial value of $6,931,678, of which $6,380,606 came from Mexico, $479,650 from Central American States, $50,752 from South America, and the remainder from other countries.

Foreign silver coin of the value of $3,731,544 was imported, of which $3,286,370 came from Mexico, $319,653 from British Honduras, $82,063 from Central America, $8,588 from Japan, $4,029 from China, and the remainder from other countries.

The value of silver contained in ore and base bullion imported was $17,050,635, of which $13,793,291 came from Mexico, $2,221,732 from Canada, $1,007,294 from South America, and the remainder from other countries.

United States silver coin of the value of $518,397 was returned to this country, of which $153,501 came from Philippine Islands, $217,517 from Canada, $119,172 from West Indies, $12,320 from Japan, and the balance from other countries.

The total silver imports were as follows:

SILVER IMPORTS FISCAL YEAR 1902.

Items.	Value.
Foreign bullion	$6,931,678
Foreign coin	3,731,544
Silver contained in ore	17,050,635
Total foreign	27,713,857
United States coin	518,397
Total imports	28,232,254

SILVER EXPORTS.—The total value of silver exported during the fiscal year was $49,732,390, of which $45,971,249 was domestic and $3,761,141 was foreign.

During the year there was exported 81,339,084 ounces of domestic bullion of the commercial value of $45,685,325, of which $36,848,812 went to England, $5,303,176 to Hongkong, $1,820,540 to Mexico, $1,040,926 to France, and the remainder to other countries.

The exports of domestic coin amounted to $209,291, of which $168,545 went to the West Indies, $39,746 to Canada, and $1,000 to England.

Silver contained in domestic ore and base bullion exported amounted to $76,633, of which $72,515 went to England, $2,168 to British Columbia, and $1,950 to Germany.

The exports of foreign silver was $3,761,141. Of this amount $3,759,805 consisted of foreign coin, of which $3,026,793 went to Hongkong, $243,650 to England, $203,558 to Mexico, $176,814 to Canada, and the remainder to various countries.

Foreign bullion was exported to the value of $625 and foreign ores to the value of $711, both of which went to England.

SILVER EXPORTS, FISCAL YEAR 1902.

Items.		Value.
Domestic bullion		$45,685,325
United States coin		209,291
Silver contained in ore		76,633
Total domestic		45,971,249
Foreign coin	$3,759,805	
Foreign bullion	625	
Foreign ores	711	
Total foreign		3,761,141
Total exports		49,732,390

MOVEMENT OF GOLD FROM THE PORT OF NEW YORK.

The superintendent of the United States assay office at New York has kindly prepared the following tables, giving exports of gold through the port of New York during the fiscal year ending June 30, 1902.

STATEMENT OF UNITED STATES GOLD COIN AND BULLION EXPORTED FROM THE PORT OF NEW YORK TO EUROPE DURING THE FISCAL YEAR ENDED JUNE 30, 1902.

Date.	Country.	Amount.	Rate of exchange.
1901.			
July 3	Germany	$606,766	$4.87⅛
July 10	do	753,000	4.87⅛
Do	do	3,100	4.87⅛
Do	England	29,720	4.87⅛
August —	do	28,985	.....
September —	do	25,130	.....
Do	Germany	2,050	.....
October 19	do	200,000	4.86½
October 30	France	2,851,585	4.86½
Do	England	11,506	4.86½
November 4	do	1,502,109	4.87
November 6	do	250,000	4.87
Do	France	1,006,609	4.87
November 13	do	4,602,723	4.87⅛
November 18	Germany	250,000	4.88
Do	do	1,764,650	4.88
Do	France	5,821,166	4.88
November 23	Germany	225,792	4.87½
Do	do	25,000	4.87½
Do	do	2,700	4.87½
Do	England	19,188	4.87½
December 2	Germany	2,117,372	4.87½
December 4	do	300,000	4.87⅛
December 11	do	500,000	4.86½
Do	do	252,944	4.86½
Do	Austria	253,056	4.86½
Do	Germany	2,850	4.86½
Do	England	7,170	4.86½
1902.			
January 3	Germany	603,650	4.87
Do	England	142,320	4.87
January 10	Germany	525,000	4.87¼
January 20	France	461,114	4.87¼
February 5	do	4,265,979	4.87¼
Do	England	800	4.87¼
February 26	France	3,514,510	4.87½
March 5	do	2,007,188	4.87½
March 7	do	1,816,538	4.87½
April 7	do	2,518,689	4.87½
April 23	do	150	4.87½
April 29	England	39,600	4.87
May —	do	420	.....
Do	Germany	5,550	.....
June 17	England	1,860	4.87⅛
Do	Germany	5,000	.....
	Total	39,317,539	

RECAPITULATION OF GOLD EXPORTS TO EUROPE.

Description.	England.	France.	Germany.	Austria.
United States coin	$289,600	$150	$2,400,000	.....
Foreign coin	97,600	228,484	3,840	.....
United States assay office bars	.....	30,365,099	5,714,524	$253,056
Bullion	111,023	3,113	.....	.....
In ore	123,074	14,200	10,700	.....
Total	654,297	30,611,046	8,129,064	253,056
Grand total of exports to Europe				39,647,463
During the same period there were shipped to West Indies, Mexico, Central and South America, etc., the following, viz:				
United States coin			$1,906,532	
Foreign coin			15,853	
Total				1,922,385
Grand total of exports				41,569,848

The imports of gold at the port of New York during the same period were as follows, viz:

From Europe:		
United States coin		$974,650
Foreign coin		2,171
Bullion		243,335
Total from Europe		1,220,156
From other ports:		
United States coin	1,008,941	
Foreign coin	759,036	
Bullion	1,465,155	
In ore and base bullion	1,080,131	
Total from other ports		4,313,263
Grand total of imports		5,533,419

STOCK OF MONEY IN THE UNITED STATES.

It has been the custom to present in the reports of this Bureau an estimate of the stock of domestic gold and silver coin in the United States at the end of each calendar and fiscal year.

The estimated stock of domestic coin in the United States at the end of the fiscal year (June 30, 1902) was, gold, $1,068,311,784; silver, $637,358,923; a total of $1,705,670,707.

OFFICIAL TABLE OF STOCK OF COIN IN THE UNITED STATES JUNE 30, 1902.

Items.	Gold.	Silver.	Total.
Estimated stock of coin, June 30, 1901	$1,015,433,325	$610,447,025	$1,625,880,350
Net imports, United States coin, fiscal year 1902		[a] 309,106	309,106
Coinage, fiscal year 1902	61,980,573	30,116,369	92,096,942
Total	1,077,413,898	640,872,500	1,718,286,398
Loss:			
Net exports, United States coin, fiscal year 1902	5,500,521		5,500,521
United States coin melted for recoinage	1,501,593	3,336,977	4,838,570
United States coin taken out in transports for disbursement in the Philippine Islands, not recorded at the custom-house, fiscal year 1902	600,000	76,600	676,600
United States coin estimated to have been used in the arts	1,500,000	100,000	1,600,000
Total	9,102,114	3,513,577	12,615,691
Estimated stock of coin in the United States, June 30, 1902	1,068,311,784	637,358,923	1,705,670,707

[a] Of this amount $150,000 were in 1-dollar pieces.

NOTE.—The number of standard silver dollars coined to June 30, 1902, was 542,197,865, which, added to the Hawaiian coinage of 500,000, equals 542,697,865. Since July 1, 1898, the number of standard silver dollars exported has been 2,345,000 (deducting number returned from Philippine Islands June, 1902, 150,000), and since 1883 the number melted has been 177,704 (Report of the Director of the Mint, 1902, p. 291), a total disposition of 2,522,704, leaving in the United States June 30, 1902, 540,175,161 standard silver dollars and $97,183,762 in subsidiary silver coins.

In the above table the amount of coin melted for recoinage is taken at its face value, and the sources from which these amounts were obtained will be found in a table in the appendix of this report.

In addition to the domestic coin in the country, there was, on June 30, 1902, in the mints and assay offices, bullion belonging to the Government valued as follows:

* * * * * * *

MONETARY STATISTICS OF FOREIGN COUNTRIES.

The statistics of the production and coinage of the precious metals, imports and exports of gold and silver, amount of bank and government notes, both covered and uncovered, of the different foreign countries, published annually in the reports of this Bureau, are obtained directly from the governments of such countries by the representatives of the United States accredited to them.

A list of the interrogatories covering the points on which information is sought from the governments of foreign countries is sent yearly to the United States ambassadors and ministers through the Department of State, and the replies in the form of reports are forwarded directly to the Bureau of the Mint.

The interrogatories for 1901 are as follows:

1. What was the amount of gold coined during the calendar year 1901 by denominations and values? What amount of this was recoinage? Domestic and foreign coins melted given separately.
2. What was the amount of silver coined during the calender year 1901 by denominations and values? What amount of this was recoinage? Domestic and foreign coins melted given separately. If any of this was executed at foreign mints, please give separate statement.
3. Was any coinage executed for other governments during the year 1901? If so, state character and amount of same.
4. What was the weight of fine gold used in the industrial arts during the calendar year 1901?
5. What amount of this was new gold, what amount old gold, and what amount coins?
6. What was the weight of fine silver used in the industrial arts during the calendar year 1901?
7. What amount of this was new silver, what amount old silver, and what amount coins?
8. What was the import and export of gold during the calendar year 1901? (Coin, bullion, and ore, as well as their weight and value, should be given separately, if possible.) If practicable, give imports and exports by countries.
9. Same question as to silver.
10. What was the total import of United States gold coin during the year 1901?
11. What was the total import of gold from the United States, direct, in 1901?
12. What was the amount of United States gold coin deposited at the mints and melted?
13. What was the weight expressed in kilograms fine, and the value of the gold produced from the mines of the country during the calendar year 1901?
14. Same question as to the gold product of the colonies of the country, naming them separately.
15. What was the weight expressed in kilograms fine, and the value of the silver produced from the mines of the country during the calendar year 1901? (In answering this interrogatory, state whether the value given is commercial or coining value.)
16. Same question as to the silver product of the colonies of the country. (State whether the value given is commercial or coining value.)
17. What was the weight and what the value of the output of gold from the refineries of the country during the year? Give the sources of this output if practicable.
18. Same question as to silver.
19. What, approximately, was the stock of gold coin and bullion in the country at the close of the calendar year 1901? Give stock in public treasuries, and banks, and in circulation, separately.
20. Same question as to silver.
21. What was the amount of Government notes outstanding at the end of the year 1901?
22. What was the amount of bank notes outstanding at the end of the year 1901?
23. What was the amount of Government notes outstanding not covered by legal-tender gold and silver coin or bullion at the end of the year 1901?
24. What was the amount of bank notes outstanding not covered by legal-tender gold and silver coin or bullion at the end of the year 1901?
25. What was the actual currency of the country, gold, silver, or inconvertible paper?

26. Is gold at a premium as compared with the actual currency of the country? And if it is, what was the highest, lowest, and average premium during the year 1901?
27. What was the highest, lowest, and average rate of exchange on London during the year 1901? Give this by months if practicable.
28. Were any laws passed during the year 1901 affecting the coinage, issue, or legal-tender character of the metallic or paper currency? If so, please forward copies of the same.
29. Is there a report published on the operations of the mint? If so, please forward a copy of the same; also a report of the department of mines for 1901.

The replies to interrogatories, which are given in full in the appendix, are indicated by the numbers of the questions.

In the list of questions propounded to foreign Governments for the calendar year 1901 were the following:

What was the total import of United States gold coin during the year?
What was the total import of gold from the United States direct in 1901?
What was the amount of United States gold coin deposited at the mints and melted?

The following table shows the countries from which answers to these three interrogatories were received, the amount of United States gold coin imported by them, and the value of the United States gold coin melted at their mints:

Countries.	Import of United States gold coin.	Total import of gold from United States.	United States gold coin melted.
Austria-Hungary	$445,619	$1,619,602	$34,504
Costa Rica	313,000	385,077	.....
Germany	5,073,179	13,265,858	2,473,263
Great Britain	1,509	1,283,861	.....
Japan	438,078	185,584	.....
Dutch Guiana	7,000	.....	.....
India	189	.....	.....
Italy	1,004	.....	.....
Total	6,279,578	16,739,932	2,507,767

Respectfully,

GEO. E. ROBERTS,
Director of the Mint.

Hon. LESLIE M. SHAW,
Secretary of the Treasury.

* * * * * * *

REPORT OF THE COMPTROLLER OF THE CURRENCY.

TREASURY DEPARTMENT,
OFFICE OF THE COMPTROLLER OF THE CURRENCY,
Washington, December 1, 1902.

SIR: In compliance with the requirements of section 333 of the Revised Statutes of the United States, the fortieth annual report of the operations of the Currency Bureau for the year ended October 31, 1902, is submitted herewith.

CONDITION OF NATIONAL BANKS.

The resources and liabilities of the banks in active operation, as shown by reports submitted during the past year, appear in detail in the following table:

ABSTRACTS OF REPORTS OF CONDITION OF NATIONAL BANKS IN THE UNITED STATES FROM DECEMBER 10, 1901, TO SEPTEMBER 15, 1902.

	Dec. 10, 1901, 4,291 banks.	Feb. 25, 1902, 4,357 banks.	Apr. 30, 1902, 4,423 banks.	July 16, 1902, 4,535 banks.	Sept. 15, 1902, 4,601 banks.
RESOURCES.					
Loans and discounts	$3,038,255,447.04	$3,128,627,094.44	$3,172,757,485.31	$3,221,859,631.21	$3,280,127,480.69
Overdrafts	43,356,248.14	32,314,886.87	27,211,618.90	24,657,222.96	34,111,552.58
U. S. bonds to secure circulation	324,507,180.00	320,978,280.00	316,271,180.00	316,138,980.00	324,253,760.00
U. S. bonds to secure U. S. deposits	110,257,830.00	114,055,360.00	120,561,030.00	124,408,250.00	124,685,150.00
U. S. bonds on hand	7,953,600.00	10,082,240.00	7,716,980.00	7,896,350.00	8,008,100.00
Premium on U. S. bonds	10,363,461.74	10,739,048.09	11,012,091.59	11,529,454.50	12,218,347.01
Stocks, securities, etc	451,580,561.70	458,744,961.01	467,403,724.24	484,956,796.53	493,109,726.57
Banking house, furniture, and fixtures	87,091,224.82	87,883,087.12	89,915,381.05	91,364,938.72	92,652,268.87
Other real estate and mortgages owned	22,962,670.30	22,244,924.08	22,685,159.01	21,964,808.89	21,558,989.31
Due from national banks	274,882,707.30	265,712,742.40	260,842,095.07	266,665,842.49	264,616,195.02
Due from State banks and bankers	76,633,734.67	78,932,642.39	78,546,740.87	80,361,315.61	89,993,517.55
Due from approved reserve agents	432,958,827.93	490,303,538.15	467,417,747.14	471,696,390.97	465,640,578.36
Internal-revenue stamps	553,372.26	472,071.13	416,220.27	358,606.26	286,587.85
Checks and other cash items	22,625,246.40	20,437,030.53	26,236,728.75	22,305,546.99	24,501,107.66
Exchanges for clearing house	253,419,892.83	196,618,118.24	290,651,830.99	247,113,366.18	327,762,581.07
Bills of other national banks	24,957,145.00	23,483,765.00	24,919,204.00	26,171,303.00	22,861,873.00
Fractional currency, nickels, and cents	1,320,135.32	1,475,934.20	1,490,359.52	1,498,345.03	1,378,296.83
Gold coin	105,425,840.42	105,572,076.83	110,687,137.75	108,202,383.47	104,051,295.64
Gold Treasury certificates	$100,266,100.00	$126,900,190.00	$105,709,930.00	$106,867,430.00	$84,248,770.00
Gold Treasury certificates payable to order	13,315,000.00	16,970,000.00	21,720,000.00	25,950,000.00	28,425,000.00
Gold clearing-house certificates	84,746,500.00	88,409,000.00	83,749,000.00	82,099,000.00	82,137,000.00
Silver dollars	9,600,000.00	9,594,579.00	9,999,626.00	10,379,556.00	8,868,571.00
Silver Treasury certificates	48,452,821.00	51,277,355.00	58,590,893 00	62,466,880.00	50,747,624.00
Silver fractional coin	7,846,236.82	8,358,961.58	8,303,974.30	8,798,718.73	7,757,859.38
Total specie	369,652,498.24	407,082,162.41	398,760,561.05	404,763,968.20	366,236,120.02
Legal-tender notes	151,118,358.00	154,682,692.09	159,484,226.00	164,854,292.00	141,757,618.00
Five per cent redemption fund	15,936,850.64	15,627,825.02	15,244,838.24	15,375,536.41	15,799,678.88
Due from Treasurer U. S	2,343,643.16	2,550,317.06	2,590,240.77	2,814,029.57	2,369,383.23
Total	5,722,730,635.49	5,843,048,720.14	5,962,135,451.77	6,008,754,975.52	6,113,928,912.50
LIABILITIES.					
Capital stock paid in	665,340,664.00	667,381,231.00	671,176,312.00	701,990,554.00	705,535,417.00
Surplus fund	287,170,337.92	294,951,786.67	298,597,508.75	325,524,915.07	326,393,953.66
Undivided profits, less expenses and taxes	161,724,941.55	154,653,757.79	162,388,086.18	156,852,527.64	169,216,512.03
National-bank notes outstanding	319,437,312.00	314,438,680.00	309,781,739.50	309,336,599.00	317,991,809.00
State-bank notes outstanding	51,874.50	51,874.50	51,874.50	42,781.50	42,781.50
Due to other national banks	629,684,437.98	685,966,644.10	658,518,344.53	626,954,587.12	648,885,530.59
Due to State banks and bankers	289,161,149.99	311,256,012.98	291,394,304.27	310,196,963.17	285,221,529.96
Due to trust companies and savings banks	217,706,288.40	251,208,289.92	266,616,730.16	271,905,850.83	235,220,608.70
Due to approved reserve agents	32,086,013.31	30,507,368.00	32,192,844.47	33,842,229.67	31,013,564.14
Dividends unpaid	977,358.60	1,016,329.90	1,887,508.21	2,316,283.24	968,559.50
Individual deposits	2,964,417,965.82	2,982,489,300.89	3,111,690,195.77	3,098,875,772.21	3,209,273,893.93
U. S. deposits	104,167,621.42	105,940,827.75	113,554,981.28	118,238,798.45	117,097,769.59
Deposits of U. S. disbursing officers	5,581,236.91	6,355,690.58	6,549,881.26	5,727,327.15	6,846,033.85
Notes and bills rediscounted	5,974,187.21	4,819,674.91	5,377,544.93	6,746,396.40	9,041,080.58
Bills payable	16,103,380.91	10,384,662.76	9,955,530.07	15,993,174.36	24,859,807.78
Liabilities other than those above	23,145,864.97	21,626,588.39	22,402,065.89	24,210,215.71	26,320,060.69
Total	5,722,730,635.49	5,843,048,720.14	5,962,135,451.77	6,008,754,975.52	6,113,928,912.50

Since the last report to Congress statements of condition have been received from national banking associations on five dates as hereinbefore set forth. On September 15, 1902, reports were submitted by 4,601 associations, with aggregate resources of $6,113,928,912.50. The loans of the associations, representing over 50 per cent of their resources, amounted to $3,280,127,480.69. The amount of bonds on deposit as security for circulation was $324,253,760. Bonds on deposit as security for public funds aggregated $124,685,150, and the banks held in their vaults other securities of a like character to the amount of $8,008,100. The investments in other bonds, stocks, and securities aggregated $493,109,726.57; bank premises, furniture, and fixtures, $92,652,268.87; funds on deposit with approved reserve agents, $465,640,578.36; with other national banks, $264,616,195.02, and with State banks and bankers, $89,993,517.55. In addition to specie, amounting to $366,236,120.02, legal tenders, $141,757,618, bills of other banks, $22,861,873, the associations held exchanges for clearing houses to the amount of $327,762,581.07.

Capital stock paid in aggregated $705,535,417, surplus and undivided profits $326,393,953.66 and $169,216,512.03, respectively. The outstanding note issues were $317,991,809. Funds to the credit of depositors reached the highest point in the existence of the system, $3,209,273,893.93. United States deposits and deposits of U. S. disbursing officers were $117,097,769.59 and $6,846,033.85, respectively. There was due to approved reserve agents, other national banks, State banks and bankers, trust companies, and savings banks, $1,200,341,233.39. The liabilities on account of notes and bills rediscounted and bills payable were $9,041,080.58 and $24,859,807.78, respectively.

LOANS AND DISCOUNTS.

In the appendix to the annual report of the Comptroller of the Currency, Table No. 72, will be found a classification of the loans and discounts made by national banks in the reserve cities and in the States and Territories on September 15 last. The aggregate volume is $3,280,127,480, classified as follows:

On demand, paper with two or more individual or firm names, $237,322,021; on demand, secured by stocks, bonds, etc., $706,854,833; on time, paper with two or more individual or firm names, $1,176,416,533; on time, single-name paper (one person or firm), $517,149,077; on time, secured by stocks, bonds, mortgages, etc., $642,385,016.

The loans and discounts of the national banks in the city of New York on September 15 aggregated $607,058,485.12, of which $6,207,375.80 was demand paper with one or more individual or firm names; $263,775,891 demand paper secured by stocks, bonds, etc.; $118,235,347.96 time paper with two or more individual or firm names; $86,119,928.46 time single-name paper, and $132,719,941.90 on time, secured by stocks, bonds, mortgages, etc.

The average monthly rates for money in New York, January to October, 1902, were as follows:

Month.	Call loans.	Prime commercial paper.
	Per cent.	*Per cent.*
January	3 7/10 @ 4 1/2	4 3/8 @5 3/4
February	2 1/2 @ 2 3/4	4 @4 1/2
March	3 3/4 @ 4 3/4	4 1/4 @4 1/2
April	3 1/4 @ 4 1/2	4 3/8 @5 1/4
May	4 7/10 @ 6 1/2	4 3/4 @5 1/2
June	2 1/2 @ 3 1/2	4 5/8 @4 3/4
July	2 1/2 @ 4	4 1/2 @5
August	3 @ 4 1/2	4 3/4 @4 7/8
September	4 1/2 @15 1/2	5 1/2 @5 3/4
October	4 1/2 @ 8 1/2	5 3/4 @6

RESERVE.

The deposits on which reserve was required amounted to $3,844,365,538.57. The banks held in cash with reserve agents and in redemption fund $989,433,995.26, but the available reserve—that is, the proportion of deposits with reserve agents, not exceeding the percentage of reserve required after deducting the redemption fund and cash on hand amounted to $804,333,904.09, which was $17,563,177.76 in excess of the legal requirement, being an average reserve of 20.92 per cent. The banks located in the central reserve cities, New York, Chicago, and St. Louis, held a reserve of $250,684,716.24 on deposits amounting to $1,040,587,878.79, an average of 24.09 per cent. The average reserve of New York City banks was 24.70, of Chicago banks 21.89, of St. Louis 24.15. The banks located in other reserve cities held $258,045,769.41 against deposits of $1,060,571,076.74, the average reserve being 24.33 per cent. Banks located outside of the reserve cities held reserve funds to the amount of $295,603,418.44, or 16.91 per cent, on deposits aggregating $1,743,206,583.04.

While there has been no change in the method of calculating the reserve of any individual bank, the form of reporting the reserve in the abstracts issued subsequent to each call was changed, beginning with the April 30 statement. Prior to that date the percentage of legal reserve held to deposits was not shown, but merely the percentage of cash in bank, redemption fund, and amount due from approved correspondents. Corresponding information is still shown in the reserve tables, but the percentage of legal reserve held is based on the amount of specie and legal tenders in bank, the redemption fund and the amount on deposit with reserve agents, not in excess of the legal limit available. As illustrating the difference resulting from the change, it is shown that while banks in reserve cities, exclusive of central reserve cities, by the former method of computation, held a reserve of 27.64 per cent, their legal reserve was but 24.33 per cent.

From September 30, 1901, to September 15, 1902, there was an increase of $418,581,617.54 in the aggregate resources of the reporting banks, the principal items of increase being, loans and discounts, $261,511,562.29; U. S. bonds, $12,570,520; due from national and other banks, $35,217,372.29. There was an increase in capital stock of $50,193,537, in surplus and other profits of $65,048,357.81, and in individual deposits of $271,520,660.60.

Comparing conditions on September 30, 1892, with those shown in the last report, it will be seen that the number of active associations has increased from 3,773 to 4,601, or a net increase of 828. The aggregate resources of the associations increased during the decade $2,603,834,015; loans and discounts, $1,109,086,393; bonds on deposit as security for

circulation, $160,978,460, and specie and legal-tender notes, $157,119,741 and $37,489,673, respectively. While the capital of the associations increased only to the extent of $18,962,402, the surplus and undivided profits are now greater than in 1892 by $155,086,287. The volume of individual deposits increased from $1,765,422,984 to $3,209,273,894, or nearly 82 per cent. While the outstanding circulation has increased $174,568,511, or about 122 per cent, there was no material increase until subsequent to March 14, 1900, the date of the act authorizing the issue of circulation to the par value of bonds on deposit.

BONDS AND CIRCULATION.

At the close of March 13, 1900, the day preceding the approval of the act authorizing the issue of national bank circulating notes to the par value of bonds on deposit, the Treasurer held securities for that purpose to the amount of $243,651,420; on October 31, 1901, he held $329,833,930; on October 31, 1902, $338,352,670, of which approximately 95 per cent were in 2 per cent consols of 1930.

The amounts of each class of bonds on deposit to secure circulation on dates named from March 13, 1900, are shown in the following table:

Class.	Mar. 13, 1900.	Oct. 31, 1900.	Oct. 31, 1901.	Oct. 31, 1902.
Loan of 1908–1918, 3 per cent	$56,164,820	$7,756,580	$3,983,780	$6,056,720
Funded loan of 1907, 4 per cent	130,302,250	13,544,100	6,032,000	8,248,450
Loan of 1925, 4 per cent	14,697,850	7,503,350	2,911,100	2,208,600
Loan of 1904, 5 per cent	21,996,350	1,293,000	268,900	1,100,900
Funded loan of 1891, 2 per cent	20,490,150	1,019,950	12,500	
Consols of 1930, 2 per cent		270,006,600	316,625,650	320,738,000
Total	243,651,420	301,123,580	329,833,930	338,352,670

During the year 1902 circulating notes were issued to new associations, to replace redemptions, and to banks increasing their issues, in the sum of $133,309,440, of which notes of the denomination of $5 amounted, approximately, to $25,000,000; $10, $57,000,000; $20, $38,000,000; $50, $4,000,000, and $100, $8,000,000.

The amount of each denomination outstanding at the close of the year and on prior dates indicated is shown in the following table:

Denominations.	Mar. 13, 1900.	Oct. 31, 1900.	Oct. 31, 1901.	Oct. 31, 1902.
Ones	$348,275.00	$347,552.00	$346,729.00	$345,984.00
Twos	167,466.00	167,056.00	166,406.00	165,974.00
Fives	79,310,710.00	70,363,595.00	60,265,645.00	61,482,780.00
Tens	79,378,160.00	123,088,230.00	143,280,120.00	154,265,390.00
Twenties	58,770,660.00	88,408,100.00	104,454,400.00	114,806,900.00
Fifties	11,784,150.00	16,186,900.00	16,732,200.00	15,947,250.00
One hundreds	24,103,400.00	32,889,200.00	34,430,900.00	33,233,400.00
Five hundreds	104,000.00	102,500.00	97,000.00	96,000.00
One thousands	27,000.00	27,000.00	25,000.00	25,000.00
Unredeemed fractions	32,409.00	33,085.00	34,315.00	35,431.50
Total	254,026,230.00	331,613,268.00	359,832,715.00	380,398,109.50
Circulation secured by lawful money	38,004,155.00	32,784,203.00	31,634,101.00	44,614,920.50
Circulation secured by bonds	216,022,075.00	298,829,065.00	328,198,614.00	335,783,189.00

The volume of circulating notes issued from December, 1863, to October 31, 1902, was $2,630,795,575, of which $2,250,397,465 has been redeemed. During the past year there was received for redemption at the redemption agency of the Department notes amounting

approximately to $175,000,000, of which $57,000,000 were in good condition and returned to the banks of issue, and the balance redeemed and destroyed. Of the total amount sent to the Department for redemption, $145,000,000, or over 80 per cent, came from the cities of New York, Boston, Chicago, Philadelphia, and St. Louis, and nearly 50 per cent ($85,000,000) from the city of New York alone. The cost of assorting this volume of notes, including transportation charges, was 92.444 cents per $1,000. The aggregate cost of redemptions for the year was $153,796.33. In addition to this expense, the banks paid $1,633,309.15 semiannual duty on circulation, $57,625 for plates from which notes were printed, and $307,296.63 examiners' fees, and $1,833,430.79 tax on capital and surplus, making a total expense of $3,985,457.90.

At the close of the report year there were 11 banking associations in operation, with an aggregate capital of $5,660,000, and with bonds deposited with the Treasurer to the amount of $340,000, which had not issued circulating notes. Included in the number are some associations which never have availed themselves of the privilege of issuing notes.

ORGANIZATION OF NATIONAL BANKS.

The act of 1863 provided for the organization of national banking associations to continue in operation for the period named in their articles of association, but not for a longer period than twenty years from February 25 of that year. Under the provisions of this act 488 associations were organized, of which 273 are still in existence.

On June 3, 1864, the national-bank act of 1863 was repealed and reenacted with certain important amendments. Associations under this act have been incorporated to the number of 5,173, of which 3,607 are in active operation.

The act of 1870 authorized the organization of banks whose notes were redeemable in gold. Only 10 associations of this character were organized, 7 of which are still in operation, but were converted into currency banks under authority of the act of February 14, 1880. Three of these associations were closed by liquidation.

The last amendment affecting the organization of national banking associations formed a portion of the act of March 14, 1900, and empowered the Comptroller of the Currency to authorize the organization of banks with minimum capital of $25,000 in places having population not exceeding 3,000. From the date of the passage of the act to October 31 last there has been organized 805 associations with capital less than $50,000, generally with $25,000, the minimum amount authorized under that act. One of the banks of this class was placed in charge of a receiver and 13 in voluntary liquidation, leaving 791 in active operation.

Organizations, liquidations, failures, and number of banks in active operation at the close of the report year are shown in the following table:

Act of—	Organized.	In voluntary liquidation.	Insolvent.	Active.
1863	488	180	35	273
1864	5,173	1,215	351	3,607
1870	10	3		7
1900	805	13	1	791
Total	6,476	1,411	387	4,678

From March 14, 1900, to October 31, 1902, there were organized 1,212 associations, with total capital of $70,159,500, and bond deposit as security for circulation of $17,321,550. Banks to the number of 407, with capital of $49,060,000, were organized under the provisions of the act of 1864, and 805, with capital of $21,099,500, under the act of March 14, 1900.

Organizations by classes, States, and geographical divisions during the period named are shown in the following table:

NATIONAL BANKS ORGANIZED FROM MARCH 14, 1900, TO OCTOBER 31, 1902.

States, etc.	Capital, less than $50,000.		Capital, $50,000 or over.		Total organizations.		Bonds deposited.		
	No.	Capital.	No.	Capital.	No.	Capital.	Banks, capital, less than $50,000.	Banks, capital, $50,000 or over.	Total.
Maine	1	$25,000	4	$225,000	5	$250,000	$12,000	$57,500	$69,500
New Hampshire	1	25,000	2	200,000	3	225,000	10,000	50,000	60,000
Vermont	1	25,000			1	25,000	25,000		25,000
Massachusetts			5	2,150,000	5	2,150,000		175,000	175,000
Rhode Island			1	500,000	1	500,000		50,000	50,000
Connecticut	2	50,000	1	50,000	3	100,000	22,500	13,000	35,500
Total New England States	5	125,000	13	3,125,000	18	3,250,000	69,500	345,500	415,000
New York	23	585,000	23	5,510,000	46	6,095,000	199,550	875,000	1,074,550
New Jersey	12	320,000	8	625,000	20	945,000	133,550	132,500	266,050
Pennsylvania	61	1,582,000	72	9,740,000	133	11,322,000	573,600	1,617,750	2,191,350
Delaware	2	50,000			2	50,000	25,000		25,000
Maryland	11	302,000	7	730,000	18	1,032,000	77,700	190,000	267,700
Total Eastern States	109	2,839,000	110	16,605,000	219	19,444,000	1,009,400	2,815,250	3,824,650
Virginia	16	420,000	8	660,000	24	1,080,000	137,750	192,500	330,250
West Virginia	13	365,000	10	610,000	23	975,000	125,750	182,500	308,250
North Carolina	9	230,000	1	50,000	10	280,000	80,250	12,500	92,750
South Carolina	2	50,000	2	110,000	4	160,000	13,250	32,500	45,750
Georgia	8	245,000	8	850,000	16	1,095,000	63,000	182,500	245,500
Florida	2	60,000	4	350,000	6	410,000	17,500	100,000	117,500
Alabama	6	152,500	10	625,000	16	777,500	40,000	165,000	205,000
Mississippi	1	25,000	4	375,000	5	400,000	6,250	143,750	150,000
Louisiana	5	125,000	7	750,000	12	875,000	31,500	162,500	194,000
Texas	112	3,023,000	41	2,810,000	153	5,833,000	913,400	742,750	1,656,150
Arkansas	3	75,000			3	75,000	18,750		18,750
Kentucky	11	275,000	11	2,270,000	22	2,545,000	101,800	374,000	475,800
Tennessee	8	210,000	5	270,000	13	480,000	47,000	92,500	139,500
Total Southern States	196	5,255,500	111	9,730,000	307	14,985,500	1,596,200	2,383,000	3,979,200
Ohio	36	990,000	30	4,170,000	66	5,160,000	312,550	1,027,500	1,340,050
Indiana	24	645,000	17	1,950,000	41	2,595,000	213,050	510,000	723,050
Illinois	49	1,300,000	17	3,300,000	66	4,600,000	500,000	800,000	1,300,000
Michigan	4	110,000	6	430,000	10	540,000	28,550	157,500	186,050
Wisconsin	13	330,000	11	1,050,000	24	1,380,000	90,950	286,250	377,200
Minnesota	62	1,570,000	11	700,000	73	2,270,000	560,250	204,500	764,750
Iowa	49	1,300,000	17	960,000	66	2,260,000	475,750	282,500	758,250
Missouri	9	240,000	7	1,485,000	16	1,725,000	87,750	240,000	327,750
Total Middle States	246	6,485,000	116	14,045,000	362	20,530,000	2,268,850	3,508,250	5,777,100
North Dakota	35	880,000	1	50,000	36	930,000	285,500	19,000	304,500
South Dakota	24	600,000	2	100,000	26	700,000	172,550	25,000	197,550
Nebraska	28	735,000	1	50,000	29	785,000	233,300	12,500	245,800
Kansas	24	615,000	8	650,000	32	1,265,000	223,500	200,000	423,500
Montana	2	55,000	1	250,000	3	305,000	14,000	50,000	64,000
Wyoming	3	75,000	2	100,000	5	175,000	18,750	50,000	68,750
Colorado	10	265,000	7	700,000	17	965,000	71,500	190,000	261,500
New Mexico	6	150,000	1	50,000	7	200,000	48,800	12,500	61,300
Oklahoma	53	1,340,000	6	400,000	59	1,740,000	453,250	105,000	558,250
Indian Territory	43	1,135,000	10	555,000	53	1,690,000	315,400	138,750	454,150
Total Western States	228	5,850,000	39	2,905,000	267	8,755,000	1,836,550	802,750	2,639,300

NATIONAL BANKS ORGANIZED FROM MARCH 14, 1900, TO OCTOBER 31, 1902—Cont'd.

States, etc.	Capital, less than $50,000.		Capital, $50,000 or over.		Total organizations.		Bonds deposited.		
	No.	Capital.	No.	Capital.	No.	Capital.	Banks, capital, less than $50,000.	Banks, capital, $50,000 or over.	Total.
Washington	3	$80,000	4	$300,000	7	$380,000	$26,250	$75,000	$101,250
Oregon	4	100,000	.....	.....	4	100,000	33,000	.....	33,000
California	4	105,000	11	1,750,000	15	1,855,000	36,500	375,000	411,500
Idaho	5	125,000	1	50,000	6	175,000	31,300	12,500	43,800
Utah	1	30,000	1	50,000	2	80,000	7,500	12,500	20,000
Nevada	.....	.....	.....	.....	.....	.....	.....	.....	.....
Arizona	3	80,000	.....	.....	3	80,000	20,250	.....	20,250
Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hawaii	1	25,000	1	500,000	2	525,000	6,500	50,000	56,500
Total Pacific States	21	545,000	18	2,650,000	39	3,195,000	161,300	525,000	686,300
Total United States	805	21,099,500	407	49,060,000	1,212	70,159,500	6,941,800	10,379,750	17,321,550

Section 5154 of the Revised Statutes of the United States provides, in part, that any bank incorporated by special law or organized under a general law of any State may become a national banking association upon execution of articles of association and organization certificate by a majority of the directors of the State bank, upon authority of shareholders representing two-thirds of the stock. During the period covered by the foregoing table, 158 State banks, with capital of $11,490,000, were converted into national banking associations, of which 107, with capital of $2,835,000, were of the class authorized by the act of March 14, 1900, and 51, with capital of $8,655,000, under authority of the prior act. While the act cited provides that the capital of any State bank converted into a national bank shall be the same as it existed immediately before conversion, the law is construed as prohibiting conversion with a less amount of capital than that required by a bank of primary organization.

Where a bank with capital less than the necessary amount desires to convert, it is required to increase the capital to the requisite amount under the laws of the State, prior to the execution of the articles of association and organization certificate. When a State institution, to be converted, has filed with the Comptroller all the papers incident thereto and deposited the requisite amount of bonds as security for circulation, an examination is ordered to determine whether the assets are of a character which a national-banking association can lawfully hold. If assets, the holding of which contravenes the provisions of the national-banking law, are found, their disposition is required prior to the issue of certificate authorizing the beginning of business. It is frequently found advisable to place the State bank in liquidation and organize anew, as is required in the case of the organization of a bank to succeed an unincorporated bank. This course has many advantages in that it enables the organizers to obtain more desirable shareholders, more choice assets, and to begin business with the amount of capital required by law actually paid in cash.

State or private banks reorganized as national banking associations since March 14, 1900, numbered 363, with aggregate capital of $20,935,000. Of these banks, 242, with capital of $6,715,000, were

with individual capital of less than $50,000, and 121, with capital of $14,220,000, of the larger class.

Banks of primary organization numbered 691, with total capital of $37,734,500, of which 456, with capital of $11,549,500, were of the class authorized by the act of March 14, 1900, and 235, with capital of $26,185,000, with individual capital of $50,000 or over.

In the following table is given a summary of national-bank organizations from March 14, 1900, to October 31, 1902:

Classification.	Conversions.		Reorganizations.		Primary organization.		Total.	
	No.	Capital.	No.	Capital.	No.	Capital.	No.	Capital.
Capital less than $50,000 ..	107	$2,835,000	242	$6,715,000	456	$11,549,500	805	$21,099,500
Capital $50,000 or more....	51	8,655,000	121	14,220,000	235	26,185,000	407	49,060,000
Total.....	158	11,490,000	363	20,935,000	691	37,734,500	1,212	70,159,500

In the year ended October 31, 1902, 470 banks were chartered, with $31,130,000 capital, of which 302, with capital of $7,905,000, were of the smaller class, and 168, with capital of $23,225,000, with individual capital of $50,000 or over. There was an average of one and a half banks organized on every secular day of the year.

On October 31, 1901, the authorized capital stock of national banking associations in active operation was $663,224,195, and on October 31, 1902, $713,435,695. The net increase was, therefore, $50,211,500, which, however, includes $365,000, the capital of banks in liquidation whose bonds have not been withdrawn and the stock account closed.

The increase of capital by newly organized associations was $31,715,000, including the capital of new banks, which increased their capital subsequent to organization and by old associations increasing their capital $43,506,500. During the year 72 associations were closed by voluntary liquidation or expiration of charter, the capital of the banks being $22,190,000. Banks liquidated under section 5220, United States Revised Statutes, numbered 63 with capital of $21,025,000, and expirations of corporate existence, 9 with capital of $1,165,000. The reduction of capital by the action of shareholders of active associations amounted to $3,135,000, and by insolvent banks, $50,000.

SHAREHOLDERS OF NATIONAL BANKS.

In Table No. 10 of the appendix to the annual report of the Comptroller of the Currency is shown the number of shareholders and shares of stock held by shareholders in banks located in each State and geographical division, as appears from the copies of lists of shareholders filed in this office as of the first Monday of July last. The number of shareholders was 330,124 and the number of shares of stock 8,001,433. In the case of a limited number of banks which were conversions of State institutions, the par value of shares ranges from $10 to $200. The par value of stock of banks of primary organization is uniformly $100, and this also is the value of the stock of a majority of the converted banks.

VOLUNTARY LIQUIDATION.

EXPIRATION OF CORPORATE EXISTENCE AND REORGANIZATION.

Within a period of three years subsequent to the establishment of the national banking system, 14 associations had been placed in voluntary liquidation under the provisions of section 5220 of the Revised Statutes of the United States—that is, by vote of shareholders owning two-thirds of capital stock. Of the number, however, 3 were reorganized under similar titles and 1 was absorbed by another association.

During the existence of the system, year ended October 31, 1902, 1,288 associations, with aggregate capital of $210,065,060, were liquidated under authority conferred by the act cited, of which, however, 136, with capital of $38,555,000, were reorganized under similar titles. It is understood that some of the banks which were placed in liquidation were absorbed by other associations, but the records of this office do not contain sufficient information on this point to enable even an approximate estimate to be made of the number.

Under the provisions of the act of February 25, 1863, 98 banks were organized, whose corporate existence ran for a period of but 19 years, in consequence of which, their charters expired in 1882. Up to the close of the report year, 1902, 123 banks, with aggregate capital of $18,979,500, reached the termination of their corporate existence and were closed under the provisions of section 7 of the act of July 12, 1882. Of the number, 75, with capital of $12,557,900, reorganized under similar titles. Summarizing the foregoing, it appears that, under the provisions of both acts cited, 1,411 banks, with capital aggregating $229,044,560, passed out of the system.

LIQUIDATION AND CONSOLIDATION.

The national currency act, which follows closely the material features of the banking law of the State of New York, contains no statutory provision authorizing the consolidation of banking associations in the manner provided by the New York law. The law of that State empowers shareholders owning at least two-thirds of the capital stock of the interested corporations to consent in writing to consolidation, and authorizes the directors of each corporation to enter into an agreement for consolidation, prescribing the terms and conditions, the name of the new or consolidated bank, the directorate, term of charter, manner of converting shares of the old into shares of the new or consolidated bank. When such agreement has been filed with and approved by the State superintendent of banks, the consolidated corporations become a single corporation, with the same franchises, rights, liabilities, etc., of the constituent corporations.

The act provides that dissenting shareholders shall be paid the value of their stock, and the stock so surrendered held and disposed of by the new corporation for its own benefit.

The only reference to the subject of consolidation in the national-bank act appears in the act approved July 14, 1870 (U. S. Rev. Stat., sec. 5223), and is to the effect that any association closing its affairs (by voluntary liquidation), under authority of law, for the purpose of consolidating with another association, shall not be required to deposit lawful money to provide for its outstanding circulation, but its assets

and liabilities shall be reported by the association with which it is in process of consolidation.

By implication, this provision would appear to authorize the assignment of bonds on deposit with the Treasurer of the United States to secure the circulation of the liquidating bank to the absorbing association, and require the maintenance of a redemption fund for the outstanding issues of the bank which has gone into liquidation. With the redemption of issues of the closed bank would follow the issue of a like amount of notes of the absorbing association. As a matter of fact, this permissive feature in full has never been availed of by an association absorbing the business of one placed in liquidation, as it has been found more advantageous to deposit lawful money to redeem the notes of the liquidated bank and to simultaneously issue new notes of their own on bonds deposited.

Consolidation therefore can only be effected by one of the following methods:

First. Without an increase of capital the directors of the absorbing bank may enter into a contract with the directors or agents of the liquidated association to purchase its assets, assume liabilities to depositors and other creditors, and to pay to shareholders for their stock the value of assets purchased in excess of liabilities to depositors and other creditors, less any expenses incident to liquidation.

Second. By increasing the capital stock of the absorbing bank to an amount equal to that of the liquidated bank, the additional shares may be sold to stockholders of the latter, consent thereto having been previously obtained from shareholders of the absorbing association. As the law is construed as requiring the payment of capital, original or on account of increase, in money, and not in "evidences of debt," the right to accept assets representing stock of the closed bank, and to issue therefor certificates in the continuing bank is not recognized. In every such case shareholders of the closed association are paid the value of their stock, the proceeds being available in payment of shares to which they may be entitled in the absorbing corporation.

The preemptive right of shareholders to participate pro rata in an increase is well recognized, and it is generally incorporated in the articles of association. In order to avoid possible litigation, the course usually pursued is to secure waivers of right to participate from shareholders of record. Provision having thus been made for shareholders of the closed bank, the directors of the continuing bank are at liberty to contract for the purchase of assets and the assumption of liabilities to depositors and other creditors of the liquidated bank.

Third. The remaining method, and one occasionally pursued, is to place the interested banks in voluntary liquidation, under section 5220 of the United States Revised Statutes, organize anew, and acquire, in the manner hereinbefore outlined, the business of the liquidating associations. This enables the incorporators to place the stock as they may determine.

In view of the foregoing it is recommended that section 5223 of the Revised Statutes of the United States be amended to provide, in effect, for consolidation of national banks on the lines of the law of the State of New York, except that the corporate existence of the closing bank shall be terminated as provided by section 5220, and that where the capital stock of the absorbing bank is increased for the purpose in conformity with the provisions of section 5142 that the new stock

may be issued to shareholders of the closing association upon surrender and cancellation of their old shares at the book value of the stock of the absorbing bank, but not less than par. It is also suggested that in the event of the acquirement of business of a closed national banking association by another association, but without the consolidation of shareholders' interests, that upon increase of the capital stock of the absorbing bank for the purpose, directors of the association shall be authorized by vote of shareholders representing two-thirds of the stock to sell the additional shares as the interests of the association may demand, regardless of the recognized preemptive right of shareholders to participate pro rata when an increase is effected for purposes other than of consolidation.

The consolidation of business interests, in general, throughout the country has had its counterpart in the banking business, as evidenced by liquidations of national banks during the past year for consolidation either with institutions of the same class or State banks or trust companies. Of the total number of liquidations effected the business of 46 associations was absorbed by other national banks, 11 by State banks or trust companies, and but 15 closed to go out of business. All of the banks liquidated in New York City, Chicago, St. Louis, Albany, Boston, Baltimore, Cleveland, Detroit, Omaha, Newark, N. J., and Lowell, Mass., were absorbed by other national banks. The two associations closed in the city of New Orleans were absorbed by trust companies.

In New York City the National Commercial Bank was absorbed by the Broadway National, and the Ninth National by the Citizens' National. The Merchants' National and Albany City National, of Albany, were absorbed by the National Commercial Bank. In Chicago the Merchants' National was absorbed by the Corn Exchange National, and the Metropolitan National by the First National. The Continental National Bank of St. Louis was absorbed by the National Bank of Commerce. In Boston six associations were closed, the National Shawmut absorbing the Third and the National Bank of the Commonwealth; the National Suffolk, a reorganization of the old Suffolk National, acquired also the business of the Washington National; the State National absorbed the National Hide and Leather, and the National Bank of Redemption the business of the Shoe and Leather National.

In the city of Lowell, Mass., the First, the Merchants, and the Railroad were liquidated and reorganized as the Union National. There was but one liquidation in the city of Baltimore, the Continental National, the business of which was absorbed by the National Bank of Commerce. The Century and the Metropolitan National banks of Cleveland were liquidated, the former being absorbed by the Colonial National and the latter by the American Exchange National. The Preston National Bank of Detroit was closed for the purpose of amalgamation with the Commercial National. The Omaha National Bank acquired the business of the National Bank of Commerce of that city. The Second and the Newark City National banks of Newark, N. J., were closed, the business of the former being absorbed by the Union National and that of the latter by the National Newark Banking Company.

As a result of some of the amalgamations the stock of the absorbing bank was increased for the purpose of providing for the shareholders

of the closed institutions, but as the evidence of increase in the capital of an association is confined to report of action by shareholders and payment of additional capital, it is not known to what extent increased capital has been sold to those interested in the associations which were closed for consolidation.

EXTENSION OF CORPORATE EXISTENCE OF NATIONAL BANKING ASSOCIATIONS.

The act of July 12, 1882, provided that any national banking association organized under the act of February 25, 1863, or subsequent acts, may at any time within two years next previous to the date of expiration extend its corporate existence for a term of not more than twenty years by amending the articles of association; that the amendment shall be authorized by the consent, in writing, of shareholders owning not less than two-thirds of the capital stock; that the board of directors shall cause such consent to be certified to the Comptroller of the Currency accompanied by an application for approval of the amendment; that such amended articles shall not be valid until the Comptroller shall give his certificate that the association has complied with all the provisions required to be complied with; that upon receipt of the application and certificate of the association a special examination shall be made to ascertain the condition of the association, and that if the condition is shown to be satisfactory, by the special examination or otherwise, certificate of approval of extension shall be granted.

Section 5 of the act provides that any shareholder not assenting to amendment for extension shall give notice in writing to the directors within thirty days from date of the certificate of approval of his desire to withdraw, in which case he shall be entitled to receive from the bank the value of the shares so held by him, to be ascertained by an appraisal.

The act cited is construed as conferring discretion upon the Comptroller as to the date on which he shall issue certificate approving extension of the corporate existence of a national banking association which has complied with the provisions of law in relation to the amendment of the articles; that is, while the act apparently authorizes the issue of a certificate at any time within two years prior to the date of expiration of corporate existence, it is held that the approval of the extension must be based upon the condition of the association as shown from the report of an examination made a short time prior to expiration of the original charter, and that, as the right of a shareholder to give notice of intention to withdraw is required to be made within thirty days from date of granting of extension, the certificate of extension is issued on or about the date of expiration of charter.

There is nothing in the law relating to extension which requires a meeting of stockholders or the giving of notice to them of the date of termination of corporate existence. The position is taken that shareholders are presumed to know the limit of the corporate existence of the association in which they are interested, and that they will conclude that their right of dissent to extension begins to run from the date of issue of certificate of extension; that is, from the date of termination of the original charter. Under the law as it exists, without the initiative is taken by the board of directors or shareholders desiring to effect an extension, the corporate existence of an association will expire by limitation without action by stockholders.

It is within the power of directors controlling a two-thirds interest to effect the necessary amendment for extension without advising the minority of their purpose, and were the Comptroller's certificate to be issued at a long time (within two years) prior to the date of expiration, minority shareholders might have no knowledge of the conditions and thus forfeit their rights to give notice of intention to withdraw. The law does not require the publication of notice of extension of charter, although it has been the policy of the office to require the publication of the certificate for a period of at least thirty days from date of issue.

In the interest of stockholders of national banks the acts of July 12, 1882, and April 12, 1902, should be amended to provide for amendment of articles of association in relation to extension in the same manner as other amendments of the articles are effected; that is, by calling a meeting of shareholders, notice to be given by publication or mail thirty days in advance, unless otherwise provided by the articles of association or the by-laws, and the adoption of a resolution to extend for an additional period of twenty years. Such an amendment to the acts might also well be supplemented by a provision for publication of certificate of extension, and that the certificate shall not be issued until the day on which the old corporate existence ends, except in the event of termination of charter on Sunday or holiday, in which event the certificate should be issuable on the day prior.

The condition of an association proposing to extend can be satisfactorily ascertained only by an examination made within two or three months prior to termination of charter. Immediately upon receipt of report of examination the office is able to determine whether certificate of extension will be issued and to advise the bank in interest of that fact. An association which has been in operation for a period of twenty years is occasionally found to have acquired a certain amount of undesirable assets, some of which may be held in contravention of the provisions of the banking law. Losses and assets of the character referred to are, as a rule, required to be disposed of prior to approval of request for extension of charter.

On and after July 14, 1902, the corporate existence of existing associations organized in 1863 and extended under the act of July 12, 1882, terminated by limitation. On April 12, 1902, the act was approved empowering the Comptroller to issue certificates of extension to associations reaching the termination of their second corporate existence, which amended their articles of association in the manner provided for extensions under the act of July 12, 1882. From July 14 to October 31, 1902, certificates approving extension for a second period were issued to 24 banks, with capital stock of $3,665,000. The corporate existence of one bank in this class expired by limitation. The bank was succeeded by an association organized for the purpose, under another title. During the next year—that is, from November 1, 1902, to October 31, 1903, 248 associations will reach the termination of their second corporate existence, all of which, with the exception of 19, occur on February 24, 1903.

Under the act of July 12, 1882, up to October 31, 1902, the corporate existence of 1,961 associations, with capital of $455,395,365, was extended. The charters of 169 banks, with capital of $30,469,000, were extended during the last report year. The corporate existence of one association, organized in 1863, and of eight organized in 1882, terminated by expiration. Seven of these associations, however, were

succeeded by newly organized associations with similar titles. During the year ending October 31, 1903, the charters of 174 associations will expire unless extended in conformity with the provisions of the act of July 12, 1882.

INSOLVENT NATIONAL BANKS.

The Comptroller reports with satisfaction that fewer national banks have failed during the current year than during any similar period within the past thirteen years. Not only have there been fewer failures, but the total liabilities were much less.

During the year covered by this report only two failures of national banks occurred, and one bank, which went into voluntary liquidation May 20, 1897, was placed in the hands of a receiver for the purpose of collecting an assessment from the stockholders to cover a deficiency in assets the liquidation of which did not yield sufficient to pay the claims of creditors in full.

The aggregate liabilities of the two banks closed during the year were $369,943.55 and the unsatisfied claims against the liquidating bank placed in the hands of a receiver amounted to $138,492.82.

From April 15, 1865, to October 31, 1902, 406 banks have been placed in the hands of receivers, with aggregate liabilities amounting to $186,731,459, against which claims were settled amounting to $144,272,471, or 71.91 per cent. Compared with results in this respect, as shown by the report of the preceding year, there was a decrease of 3.44 per cent in the percentage of claims paid. This is largely to be attributed to the closing of the receiverships of the Spring Garden and Keystone national banks of Philadelphia, Pa., during the year. The percentage of claims paid by these trusts to liabilities was considerably below the average.

During the year the affairs of 22 receiverships were finally closed, leaving in operation on November 1, 1902, 78 trusts, of which 24 are on the inactive list awaiting the disposition, principally, of pending litigation before they can be finally terminated. The liabilities of the 22 receiverships closed during the year aggregate $12,187,916, on which payments have been made amounting to $7,588,730, or 62.26 per cent.

The claims proved by creditors of the 310 trusts finally closed since April 15, 1865, amounted to $92,419,880, on which payments have been made amounting to $66,274,058, or 71.71 per cent, the loss to creditors being approximately 28 per cent. Dividends at the rate of 100 per cent and interest in full or in part were paid by 208 banks, and the average rate of dividends paid by the total number of banks liquidated through receiverships since the beginning of the national system including offsets and loans paid is 78.15 per cent.

Geographically, the greatest number of failures of banks which have been liquidated (80) occurred in the Western States, followed by the Middle Western States with 67, the Eastern States with 59, the Southern States with 58, the Pacific States with 30, and the New England States with 16. Creditors of banks which failed in the New England States sustained an average loss of less than 11 per cent; in the Middle Western States, 15.20 per cent; the Eastern States, 24.26 per cent; the Pacific States, 31.37 per cent; the Western States, 22.45 per cent, and the Southern States, 32.27 per cent.

The liquidation of insolvent banks, including receivers' salaries, legal expenses, etc., has been effected at an average cost of about 8.9 per cent of the total collections.

Special effort has been directed during the year to the termination of receiverships, the payments of dividends, and the reduction of expenses, and the following table shows the number that were finally closed since the date of the last report, and their capital stock, liabilities, liabilities paid, and percentage of claims paid to total liabilities.

INSOLVENT NATIONAL BANKS CLOSED DURING THE YEAR.

Title and location of bank.	Capital stock.	Liabilities.	Liabilities paid.	Percentage of liabilities paid
First National Bank, Austin, Tex.[a]	$100,000			
Union National Bank, Denver, Colo.	500,000	$1,711,731	$1,774,052	103.64
Bankers and Merchants National Bank, Dallas, Tex	500,000	159,952	109,758	68.62
Dover National Bank, Dover, N. H	100,000	174,629	182,827	104.69
Missouri National Bank, Kansas City, Mo	250,000	1,372,949	1,111,469	80.95
First National Bank, Kearney, Nebr	150,000	218,542	120,975	55.36
First National Bank, Meade Center, Kans	50,000	20,966	13,995	66.75
First National Bank, Middlesboro, Ky	50,000	41,078	34,104	83.02
Citizens National Bank, Niles, Mich	50,000	151,670	131,447	86.67
Bennett National Bank, New Whatcom, Wash	50,000	117,275	97,462	83.10
American National Bank, New Orleans, La	200,000	817,008	345,536	42.29
First National Bank, North Manchester, Ind	50,000	138,102	121,952	88.30
First National Bank, Neligh, Nebr	50,000	126,041	93,753	74.38
Seventh National Bank, New York, N. Y.[a]	500,000			
Keystone National Bank, Philadelphia, Pa	500,000	2,474,630	571,698	23.10
Spring Garden National Bank, Philadelphia, Pa.	750,000	2,301,945	747,492	32.47
First National Bank, Penn Yan, N. Y	50,000	106,217	103,746	97.67
National Bank of Potsdam, N. Y	200,000	475,248	440,157	92.62
Consolidated National Bank, San Diego, Cal	250,000	754,723	624,898	82.80
Browne National Bank, Spokane, Wash	100,000	44,986	44,986	100.00
Sioux National Bank, Sioux City, Iowa	300,000	915,772	883,608	96.49
State National Bank, Vernon, Tex	100,000	64,452	34,815	54.02
Total	4,850,000	12,187,916	7,588,730	62.26

[a] Restored to solvency and resumed business.

An examination of the reports relating to the liquidation of insolvent national banking associations develops the fact that the total amount of claims proved against all trusts placed in the charge of receivers, from the date of the first failure in 1865 to October 31, 1902, aggregated $139,389,202, and that the approximate loss was $37,956,941. Practically the affairs of every bank which failed prior to 1892 have been finally liquidated, and in calculating the total amount of loss it has been assumed that trusts still open will be finally liquidated at an average loss not greater than 25 per cent.

For the purposes of comparison there is submitted herewith a statement of the annual (average) deposits in active national banking associations, and the ratio of annual loss sustained by creditors of insolvent national banks to the average deposits, together with the amount of claims proved and aggregate and average loss sustained by creditors.

Annual (average) deposits in active national banks, 1865–1902	$1,202,871,178
Total claims proved against insolvent national banks	139,389,202
Total loss to creditors (actual, 1865–1892, and estimated at 25 per cent of claims, 1893–1902)	37,956,941
Average annual loss	998,867
Average rate per cent of loss on claims	27.23
Average (annual) rate per cent of loss based on average deposits in active national banks	0.083

In the appendix to the annual report of the Comptroller of the Currency will be found tables containing information in detail in regard to the failure and liquidation of each bank placed in the hands of a receiver since the beginning of the national-banking system.

During the past year there have been two notable instances of the resumption of banks which had been closed by the Comptroller and placed in the hands of a receiver. The First National Bank of Austin, Tex., closed August 3, 1901. Its total liabilities amounted to $638,958.60, among which was the claim of $358,208.89 for money deposited by the treasurer of the State of Texas. Through the efforts of friends of the bank the sum of $133,000 was paid in, the bank reorganized and taken out of the hands of the receiver. The creditors, including the State treasurer, were all paid in full and the bank restored to a solvent condition.

On June 27, 1901, the Seventh National Bank of New York was closed by the Comptroller and a receiver appointed. A reorganization was effected after a thorough investigation of the affairs of the bank, a sufficient sum of money was paid in to increase the unimpaired capital to $1,700,000, and on November 12, 1901, the bank was reopened for business, all of the claims of the creditors being paid in full, with interest.

The Comptroller takes great satisfaction in reporting the very favorable termination of the affairs of the Chestnut Street National Bank, of Philadelphia, Pa. When this bank failed in December, 1897, its affairs were found in a very unfavorable and involved condition, and it was estimated that even with the collection of 100 per cent of the stockholders' liability, the assets of the bank would come far short of paying its liabilities in full. After the failure of the bank, through the efforts of the Comptroller of the Currency and the receiver of the bank, the former president of the bank was induced to assign to the receiver his equity in a large portion of the stock and bonds of the Philadelphia Record in the hope that something might in this way be saved to the creditors of the bank. Since the date of this assignment the affairs of the Philadelphia Record have been practically managed by the receiver of the Chestnut Street National Bank and his associate assignee of the Chestnut Street Trust Company.

In addition to managing the affairs of this property so ably and well that its earnings have been fully maintained and its value greatly increased, these two officers advanced at their own risk, without any hope or chance for profit to themselves, a very large sum of money to pay off the original indebtedness underlying the claim of the bank, thus preserving the equity belonging to the creditors.

On May 15, 1902, the Record securities held by the receivers were sold at public auction for the sum of $2,874,800. From the proceeds of this sale the receiver of the Chestnut Street National Bank has received the full amount of the claim of the bank, amounting to over $1,190,000, with interest. The sum thus realized has increased the assets of the receivership so that not only will all the creditors of the insolvent bank be paid in full with interest, but the assessment paid by the stockholders will be returned to them and there will probably be a further sum realized from this and the other assets of the bank.

This is such an unusually satisfactory result of the liquidation of an insolvent bank that the Comptroller feels justified in thus calling attention to it, and wishes to commend the efficient action of his predecessor, Hon. Charles G. Dawes, Comptroller of the Currency, and particularly the ability and rare fidelity to their trusts shown by Mr. George H. Earle, jr., receiver of the Chestnut Street National Bank and assignee of the Chestnut Street Trust Company, and Mr. Richard Y. Cook, his associate assignee of the Chestnut Street Trust Company.

Though opposed by bitterly contested litigation by many of the very people whose true interests they were protecting, these men have not only steadfastly performed their duty, but have personally assumed great risks for the protection of their official trusts. The final result so fully vindicates their course that no further comment is necessary, but the Comptroller feels it is due to them to thus place the facts of the case on official record.

CIRCULATING NOTES OF INSOLVENT NATIONAL BANKS.

At the suggestion of and on forms submitted by Hon. Charles N. Fowler, chairman of the Committee on Banking and Currency, whose careful study and investigation of currency problems have added so much to the information gathered on this subject, there was prepared in this office a table giving in detail the essential statistics in regard to the notes of insolvent national banks. This table is given in report No. 1425, H. R. 13363, Fifty-seventh Congress, but to render this information accessible in connection with the Comptroller's report it is reproduced in the appendix to the annual report of the Comptroller of the Currency, Table No. 101.

THE NATIONAL BANKING SYSTEM.

On February 25, 1903, the national banking system will have been in existence forty years.

The principal objects had in view by the framers of the creative law were the making of a market for the loans which the Government was making and the furnishing of bank-note currency secured by bonds which would circulate at par with Government issues and supplant the heterogeneous mass of currency then in circulation, worth par to a certain extent, but in many instances only a fraction of the nominal value.

Prior to 1863 such issues represented a large proportion of the currency of the country and from 1810 to 1842 ranged from a minimum of 48.27 per cent in 1810 to a maximum of 75.06 per cent in 1832, the average for the entire period exceeding 60 per cent. In 1843 the volume of money in the country amounted to $148,563,608, of which $58,563,608 represented bank notes. The percentage of bank notes on that date was 39.39, a fall from 51.13 in the year prior. From 1844 to 1863 a very nearly uniform ratio of bank notes to total money of the country was maintained, the percentage of the former averaging approximately 45. At the close of the fiscal year ended June 30, 1863, the total money in the country amounted to $674,867,283, of which $238,700,000 was in State bank notes, $411,167,283 Government issues, and the balance specie.

The first issue of national-bank circulation was in December, 1863. In 1865 State-bank notes were legislated out of existence by the imposition of a prohibitive tax on their circulation. In 1867 national-bank notes formed 41.08 per cent of the money in the country, and continued at that rate, approximately, until 1871, when it rose to 43.74 per cent, amounting to about 44.71 per cent in 1872 and nearly 45 per cent in 1873. From the latter date there was a rapid annual decline to 1890, when such issues represented only a slight amount in excess of one-tenth of the circulating medium of the country. In 1893 the percentage was 12; in 1896, 13.02; declined to 11 in 1898 and 1899, but

rose to 14.17 in 1900, to 14.49 in 1901, and to 14.84 in 1902. At the close of the last fiscal year, of the total money in the country, $2,563,266,958, but $380,476,334 was in bank-note currency.

National-bank notes do not appear to have formed as large a proportion of the circulating medium of the country as was anticipated, the primary causes being—

(1) The volume of greenbacks (legal tenders) issued, the extensive use of instruments of credit, and enormous coinage of gold and silver. The coinage from bullion and worn and mutilated coins, from January 1, 1863, to October 31, 1902, aggregated $2,554,798,487.42, of which $1,777,738,637.50 was gold, $741,024,759.50 silver dollars and subsidiary silver, and $36,035,090.42 minor coins. The recoinage from 1863 to 1873 was very limited, but information as to the exact amount is not available. The records in the office of the Director of the Mint show, however, that from 1873 to 1902, inclusive, recoinage of gold amounted to $58,296,863.74; of silver, $64,199,671.12; of minor coins, $3,652,216.15, an aggregate of $126,148,751.01, or a fraction less than 5 per cent of the total coinage from 1863 to 1902.

(2) Restriction on issues on notes of the denomination of $5 to one-third of the amount issuable by any association subsequent to March 14, 1900. The evident intent of Congress in incorporating this restriction of the act of March 14, 1900, was to limit the total issues of notes of that denomination to one-third of the aggregate amount issued. As a matter of fact, this proportion has not been exceeded since 1874. The year prior to the passage of the act notes of this denomination amounted to but 31 per cent of the total, declined in 1900 to 21, to 16.2 in 1901, and to 16.1 in 1902.

(3) Inelasticity, by reason of the monthly limit of the amount which may be withdrawn from circulation by depositing lawful money therefor.

Section 9 of the act approved July 12, 1882, limits the amount of lawful money which may be deposited with the Treasurer of the United States by national banks reducing their circulation to $3,000,000 during any calendar month.

The repeal of this provision is respectfully recommended, as its removal from the statute would, it is believed, add to the elasticity of national-bank circulation. It has served its purpose, and there does not appear to be any good reason why it should continue longer in force.

The principal causes which led to this enactment were the following:

Banks reducing their circulation were not subject to assessment for the cost of transportation and redemption of their notes covered by a deposit of lawful money, there being no means of charging reducing banks with the expense of redeeming their notes until their deposit of lawful money was exhausted. The effect of this was that many banks apparently took advantage of the unrestricted privilege of reducing their circulation for the purpose of escaping the expense and trouble of redeeming their notes through the medium of the 5 per cent redemption fund, thereby unjustly imposing upon the Government and the other banks the entire burden of redeeming their notes, and after depositing lawful money to reduce their circulation immediately proceeded to increase it in a like amount, thus, while deriving the full benefit of their circulation, bore none of the expenses incident to its redemption.

The act of June 20, 1874, which conferred upon the banks the privilege of retiring their note issues at will, contemplated that such reductions would be made during periods of redundancy only and not for the purpose of throwing upon the Government and the other banks the burden of redeeming their notes.

This abuse was one of the causes which led to the adoption of the three-million limitation in the act of July 12, 1882, and also to the incorporation in the same act of the provision that "all national banks which have heretofore made or shall hereafter make deposits of lawful money for the redemption of their circulation shall be assessed * * * for the cost of transporting and redeeming their notes redeemed from such deposits subsequent to June 30, 1881."

The effect of this latter provision was to materially reduce the average rate of assessment for redemptions of all the national banks since the passage of the act of July 12, 1882, and to place it beyond the power of reducing banks to make the Government and the other banks bear the expense of redeeming their notes.

Another reason for the adoption of the limitation referred to was that the lawful money deposited by reducing banks for the redemption of their circulation was required to be held as a trust fund by the Treasurer of the United States, available only for redemption of notes of the banks when presented which made the lawful money deposit.

The practical operation of this law was to withdraw from circulation and lock up in the Treasury of the United States lawful money equal to the amount of national-bank notes covered by the deposit, thereby contracting the currency to that extent, as none of such deposit could be liberated until the national-bank notes were presented for redemption. On a number of occasions during the period this deposit was required to be carried as a trust fund it reached the sum of over $100,000,000.

Subsequent legislation, however, provided a remedy for this evil. Section 6 of the act of July 14, 1890, authorized the covering into the Treasury, as a miscellaneous receipt, all balances standing with the Treasurer of the United States to the respective credits of national banks for deposits made or thereafter received to redeem their circulating notes, and provided for the redemption of such notes from the general cash in the Treasury, the Government assuming liability therefor.

Thus it will be seen that two of the principal reasons which contributed to the restrictive legislation referred to no longer prevail as a necessity for continuance of this limitation provision in the statute, leaving but one other cause then advanced as an argument for this enactment to be considered in connection with its repeal, namely, the danger and possibility of too great a contraction of bank-note currency by reason of the temptation offered the banks to avail themselves of the greater profit to be derived through withdrawal and sale of their bonds held as security for circulation, by the prevailing high premium on bonds, particularly at a time when the legitimate business needs of the country demanded an increase rather than a reduction of circulation.

Subsequent experience, however, has demonstrated that there were very slight grounds for this apprehension.

When circulation was limited by law to 90 per cent of the par of the bonds deposited, the market value of the bonds and the 10 per cent margin over note issues were incentives to the banks to curtail their circulation whenever the premium on the bonds became exceptionally

high, or whenever they needed more loanable funds, as more money was at their disposal after reducing their circulation and selling their bonds by 10 per cent plus the premium on the bonds than they had before.

The act of March 14, 1900, however, minimized the temptation to operations of this character by increasing the issue of circulation to par of the bonds, thereby giving to the banks dollar for dollar of their bond deposit. Since this enactment, therefore, the only incentive for banks to operate in the securities of the Government is the premium on the bonds. The volume of circulation, however, does not appear to have been materially affected by transactions of this character, either before or since the adoption of the three million limitation in the act of July 12, 1882, either in periods of stringency or redundancy of national-bank circulation.

The act of June 3, 1864, provides for the surrender by the banks of their own notes in sums of not less than $1,000 and the return to them of a like amount of their bonds. While it was and still is within the power of the banks under authority of this provision to retire the whole amount of their note issues which may come into their possession, notwithstanding the three-million limitation in the act of July 12, 1882, the reduction of circulation through this source has been inconsiderable.

The act of June 20, 1874, provided for a reduction of circulation by a deposit of lawful money with the Treasurer of the United States equal to the amount of the notes to be retired. While this act contained no limitation as to the amount of the lawful money which could be deposited in any one month, the records of the Comptroller's office show that during the period from June 20, 1874, to July 12, 1882, on which latter date the act was approved, limiting lawful money deposits for reduction of circulation to three million a month, this limit was not exceeded except on six occasions. In February, 1876, the lawful money deposited for this purpose amounted to $3,739,547; in March, 1876, to $5,000,259; in January, 1880, to $3,375,000; in February, 1881, to $13,954,749; in March, 1881, to $5,740,035; and in April, 1882, to $3,852,970, and these deposits, with the single exceptions of February and March, 1876, appear to have been due to causes other than a desire on the part of the banks to avail themselves of the premium on the bonds.

The large deposits of lawful money in February and March, 1876, may be attributed partly to a call for redemption of the 5 per cent bonds and partly to the high premium on the bonds at that time.

The large deposit of lawful money in January, 1880, was principally due to the purchase by the Government in open market of over 100 millions of 5 and 6 per cent bonds for cancellation which had previously been refunded into 4 per cents.

The $19,694,784 of lawful money deposited in February and March, 1881, was induced by a bill under consideration in Congress to provide for the refunding of a large portion of the public debt bearing interest at the rate of 5 and 6 per cent, which matured on or about July 1 of that year. The national banks held $210,000,000 of these maturing bonds, and this refunding bill provided that after May 1, 1881, the date of the maturity of the 5 per cent bonds, the proposed new 3 per cent bonds would be the only securities receivable for circulation, and that bonds on deposit as security for circulation upon which interest had ceased should be withdrawn within thirty days from the date interest ceased or the bank might be placed in the hands of a

receiver. Other features of this bill were equally severe upon the banks, and the only alternative left them appeared to be to deposit lawful money to retire their circulation and reduce their bond deposit to the minimum. Alarmed by this proposed legislation, 141 banks deposited lawful money to reduce their circulation in order to withdraw their bonds before the bill became a law. This bill passed both houses of Congress, but was vetoed by the President on March 3, 1881.

The $3,852,970 deposit of lawful money in April, 1882, was the result principally of the refunding operations of the Government. In 1881 the 5 or 6 per cent bonds were extended at 3½ per cent, and in 1882 these latter bonds were changed into 3 percents. The banks held $259,000,000 of these bonds.

The restriction against an increase in circulation within six months from the date circulation was last reduced was repealed by the act of March 14, 1900.

The limitation against a reduction of circulation in excess of $3,000,000 a month should also be repealed.

Bank-note circulation secured by bonds should be unrestricted except as to limiting the maximum amount of such issues to the capital of the respective banks as now provided by law. The volume of circulation should be governed by the business needs of the country. If the banks are expected to increase their note issues to meet unusual and temporary demands for more money in their respective communities, they should be as free to promptly retire the whole or any portion of such issues when the demand for money has subsided. Many banks refrain from increasing their circulation during such periods of commercial activity because of their inability to promptly retire it upon a return to normal business conditions.

A repeal of the three million limitation, it is believed, will contribute materially to the elasticity of the currency.

(4) Insufficient profit, as evidenced by the comparatively limited amount of circulation issued subsequent to the removal of restrictions by legislative enactments on July 12, 1882, and March 14, 1900.

The act of February 25, 1863, as amended by the acts of June 3, 1864, and July 12, 1870, limited the amount of national-bank circulation issuable to $354,000,000, to be apportioned to associations in the States and Territories according to representative population. Each association with capital not exceeding $500,000 was entitled to issue notes on the security of bonds to 90 per cent of its capital; banks with capital exceeding $500,000, and less than $1,000,000, 80 per cent; with capital exceeding $1,000,000, but not exceeding $3,000,000, 75 per cent; and with capital exceeding $3,000,000, 60 per cent.

The act of June 20, 1874, authorized an additional issue of circulating notes to the amount of $55,000,000, but it was not until 1882 that all banks were placed on the same basis with respect to the amount of circulation issuable on bonds. By the act of July 12, 1882, every association was entitled to receive from the Comptroller and to issue circulating notes to the extent of 90 per cent of the bonds deposited, the amount of the bond deposit being limited to 100 per cent of capital. The act of March 14, 1900, authorized issues to the par value of bonds deposited not exceeding the capital stock.

The subjoined table gives the paid-in capital stock of the national banks from 1863 to 1874, inclusive, and authorized capital from 1875 to 1902; the outstanding circulation, 1863 to 1902; the percentage of the circulation to capital from 1863 to 1874, inclusive; and the per-

centage of circulation outstanding to the maximum amount issuable from 1882 to 1902. In 1865 the capital of the associations in existence was $393,200,000; circulation outstanding, $204,600,000, or 52.03 per cent of the capital. In 1866 the circulation had increased to 70.54 per cent of the capital, and, with slight variations, continued at that rate until 1874. From 1875 to 1881 the percentage varied from 63.62 to 76.96.

The year 1882 witnessed a material reduction in the public debt, large importations of coin in excess of exports, increase of capital stock of national banks, and their note issues, which resulted in a material increase in the stock of money in the country. From October 31, 1881, to October 31, 1882, the capital stock of national banking associations was increased about $25,300,000, and circulating notes outstanding to 81.6 per cent of the maximum amount issuable on bonds deposited. Notwithstanding a further increase during the following year of about $25,000,000 in capital, the percentage of circulation outstanding to the maximum issuable fell to 75.48 per cent. From that date to October 31, 1892, there was a rapid decline in outstanding circulation to 27.54 per cent, a trifle in excess of one-fourth of the amount which might have been issued. In 1893 the percentage of outstanding issues increased to 33.31 and in 1899 to 44.37. The act of March 14, 1900, resulted in a substantial increase, but in October of that year the issues amounted to but 52.42 per cent of the amount issuable; on October 31, 1901, were 54.25 per cent, and on October 31, 1902, fell to 53.32 per cent.

The capital, circulation outstanding, and relation of the latter to capital and to maximum amount of circulation issuable, respectively, as indicated, are shown in the following table:

Year.	Capital.[a]	Circulation.		Year.	Capital.[a]	Circulation.	
		Amount.	Per cent.[b]			Amount.	Per cent.[b]
	Millions.	*Millions.*			*Millions.*	*Millions.*	
1863	7.2			1883	516.6	350.8	75.48
1864	86.8	58.8	67.74	1884	532.6	332.5	69.37
1865	393.2	204.6	52.03	1885	532.9	314.9	65.66
1866	415.5	293.1	70.54	1886	552.8	301.0	60.50
1867	420.1	299.1	71.19	1887	583.2	271.7	51.77
1868	420.6	300.1	71.35	1888	596.8	239.0	44.49
1869	426.4	299.7	70.29	1889	620.2	201.7	36.14
1870	430.4	301.9	70.14	1890	659.8	179.4	30.21
1871	458.3	324.5	70.80	1891	684.8	172.0	27.91
1872	479.6	341.0	71.10	1892	693.9	172.0	27.54
1873	491.1	348.3	70.92	1893	696.0	208.7	33.31
1874	493.8	348.8	70.63	1894	672.7	207.1	34.20
1875	511.6	343.2	67.08	1895	664.1	213.5	35.72
1876	502.8	319.9	63.62	1896	658.3	234.4	39.56
1877	486.7	315.9	64.90	1897	638.0	230.0	40.05
1878	473.9	319.6	67.44	1898	624.6	239.5	42.61
1879	462.4	335.1	72.47	1899	608.5	243.0	44.37
1880	466.6	342.0	73.30	1900	632.5	331.6	52.42
1881	466.3	358.9	76.96	1901	663.2	359.8	54.25
1882	491.6	361.0	81.60	1902	713.4	380.5	53.32

[a] Paid-in capital stock 1863 to 1874; authorized capital 1875 to 1902.
[b] Percentage of circulation to capital stock 1863 to 1881; to 90 per cent of capital 1882 to 1899 and to capital, 1900 to 1902.

The profit on national-bank circulation, secured by $100,000 of bonds of various classes available for that purpose, at the market price of securities on October 31, 1899 to 1902, as calculated by the Government actuary, is shown in the table following. In the computation money is assumed to be worth 6 per cent per annum.

On October 31, 1902, consols of 1930 were quoted at 110.087. The profit on circulation secured by that class of bonds, in excess of 6 per

cent on the investment, is shown to be $684.40, or 0.622 of 1 per cent. The profit on circulation secured by 3 per cent bonds, loan of 1908, is 0.163 per cent, and on security of 4 percents of 1907 is 0.185 per cent. By reason of the high premium on the loan of 1925, namely, 36.3859, and the short time the loan of 1904 has to run, there is no profit over 6 per cent on the amount invested in bonds on circulation covered by these two classes of securities.

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FOREIGN BANKS OF ISSUE.

In publishing returns relating to foreign banks of issue special importance is placed on their holdings of specie, notes in circulation, and deposits, the latter including accounts current—funds due to other banks and bankers. The subjoined table, relative to the items mentioned, is reprinted from the Bulletin de Statistique. The data in the column headed "Capital" are from various sources, as indicated in the footnotes. It will be observed that the note issues of all the banks exceed the amount of specie, except in the case of the Bank of England, the Imperial Bank of Russia, and the Imperial Ottoman Bank. The excess of note issues over specie held is 3,521,700,000 francs. The liabilities of the banks on account of circulation, deposits, and accounts current aggregate 26,313,800,000 francs.

The following is the table referred to:

CAPITAL, SPECIE, CIRCULATION, ETC., OF THE PRINCIPAL FOREIGN BANKS OF ISSUE AT THE CLOSE OF THE FIRST QUARTER, 1902.

[Expressed in millions.]

Banks.	Capital.	Gold.	Silver.	Total specie.	Circulation.	Deposits and accounts current.	Minimum rate of discount.
	Francs.	*Francs.*	*Francs.*	*Francs.*	*Francs.*	*Francs.*	*Per cent.*
Imperial Bank of Germany	*a* 150.0	.....	.....	1,238.7	1,762.1	707.6	3
Banks of issue of Germany	*d* 81.7	.....	.....	81.1	199.1	115.9	.....
Bank of Austria-Hungary	*b* 217.0	1,110.4	320.4	1,430.8	1,543.4	126.7	3½
National Bank of Belgium	*a* 50.0	.....	.....	117.4	604.7	63.9	3
National Bank of Bulgaria	*f* 9.1	.....	.....	13.4	28.4	77.0	8
National Bank of Denmark	*c* 35.0	101.4	.....	101.4	141.7	8.1	5½
Bank of Spain	*a* 150.0	354.1	492.2	846.3	1,598.4	518.3	4
Bank of Finland	*b* 10.0	21.2	3.1	24.3	62.0	26.6	.....
Bank of France	*f* 182.5	2,570.2	1,125.0	3,695.0	4,041.0	544.6	3
National Bank of Greece	*b* 20.0	.....	.....	1.8	129.8	86.8	6½
Bank of Italy	*f* 240.0	318.4	66.4	384.8	863.5	176.2	5
Bank of Naples	*e* 60.0	70.0	13.2	83.2	256.1	66.7	5
Bank of Sicily		35.3	1.9	37.2	61.1	32.3	5
Bank of Norway	*f* 17.4	42.7	.....	42.7	75.3	10.1	4½
Bank of Netherlands	*a* 41.7	122.2	171.8	294.0	464.9	12.2	3
Bank of Portugal	*b* 75.5	27.1	38.7	65.8	373.9	13.2	5½
National Bank of Roumania	*f* 12.0	51.5	4.3	55.8	154.2	*f* 97.0	6
Bank of England	*g* 367.0	944.4	.....	944.4	759.0	1,108.1	3
Banks of Scotland	*g* 234.6	.....	.....	157.8	197.5	*g* 2,683.0	.....
Banks of Ireland	*g* 181.8	.....	.....	82.1	174.6	*g* 1,227.9	.....
Imperial Bank of Russia	*f* 133.4	1,943.5	236.0	2,179.5	1,469.6	436.5	4½
National Bank of Servia	*c* 20.0	5.9	9.3	15.2	35.7	2.7	6
Royal Bank of Sweden	*f* 61.7	66.2	8.0	74.2	126.7	51.0	4½
Private banks of Sweden	*a* 107.5	7.6	16.8	24.4	63.6	802.8	.....
Banks of Switzerland	*a* 156.0	104.0	8.3	112.3	221.1	1,226.8	3½
Imperial Ottoman Bank	*f* 125.0	.....	.....	67.9	23.7	186.0	.....
Bank of Japan	*f* 77.4	.....	.....	201.2	463.3	11.4	8
Total	2,816.5	7,896.1	2,515.4	12,372.7	15,894.4	10,419.4	.....

a From Comptroller's Report, 1897.
b From Comptroller's Report, 1896.
c Conant's History of Modern Banks of Issue.
d Bulletin de Statistique.
e Approximate.
f Banking Almanac, 1901.
g Statement prepared for Comptroller's Report, 1902.

SAVINGS BANKS OF THE WORLD.

Statistics are hereinafter submitted relating to the number of depositors, amount of deposits, average deposit account, average deposit per inhabitant, and rate of interest paid to depositors by postal and other savings institutions in countries relative to which information has been obtained. It will be observed that returns submitted are for various dates from 1898 to 1902, inclusive.

Germany leads in the number of depositors, 13,854,927, the average deposit account being $139.25 and the average deposit per inhabitant $35.46. The number of depositors in savings banks in the United Kingdom and France is shown to be nearly equal, namely, 10,434,877 and 10,680,866, respectively. The average savings account in the banks of the United Kingdom is $89.71, and of France, $77.29. The per capita deposit, however, is more nearly equal, namely, $22.53 in the United Kingdom and $21.21 in France. The United States comes fourth in the number of savings depositors, having 6,666,672, the average account being $412.53, and the per capita deposit, $34.89.

The number of depositors in foreign savings banks is shown to be 66,383,587, with deposits to their credit of $6,661,067,000. The deposits in foreign savings banks and those of the United States aggregate $9,411,244,000, of which $2,750,177,000, or over 29 per cent, represent the deposits in savings banks of the United States. The highest average deposit per inhabitant is $72.45, in Denmark. The average deposit in Prussia is $39.67, but when computation is based on all Germany the average is reduced to $35.46. The deposit per capita in Australasia is $38.82; in Norway, $36.95; Belgium, $34.61. Information relating to the rates of interest paid savings depositors is not complete, but so far as returns are received, it appears that there is but slight variation. The maximum rate is paid in Sweden, namely, 4 to 5 per cent; the German savings banks pay from 3 to 4 per cent; the English, French, and Australian, 2½ to 3 per cent; Canadian, 3 per cent; and United States, 2⅕ to 4½ per cent, with an average of, approximately, 3½ per cent.

In the following table is shown the returns of the savings banks of the world:

NUMBER OF DEPOSITORS, AMOUNT OF DEPOSITS, AVERAGE DEPOSIT ACCOUNT, AVERAGE DEPOSIT PER INHABITANT AT THE END OF THE YEARS MENTIONED, AND RATES OF INTEREST ON DEPOSITS PAID BY POSTAL AND OTHER SAVINGS BANKS OF THE WORLD.

[From official sources.]

Countries.	Period.	Number of depositors.	Total deposits.	Average deposit account.	Average deposit per inhabitant.	Rate of interest.	Population.
						Per cent.	
Russia (in Europe)	1901	3,935,773	$428,345,000	$108.83			
Finland	1900	181,269	15,700,000	86.61	$5.87		2,673,000
Germany	1898	13,854,927	1,929,332,000	139.25	35.46	3 to 4	54,406,000
Prussia[a]	1900	8,670,709	1,367,499,000	157.71	39.67	3 to 4	34,472,000
Japan	1900	5,825,578	36,948,000	6.34	.83		44,261,000
Austria	1900	4,792,611	833,210,000	173.85	32.14		25,922,000
Hungary	1900	1,202,889	283,995,000	236.09	14.85		19,122,000
United Kingdom	1901	10,434,877	936,117,000	89.71	22.53	2.5	41,546,000
France	1900	10,680,866	824,932,000	77.20	21.21	2.5 to 3	38,900,000
Italy	1899	5,669,590	448,700,000	79.14	14.08		31,856,000
Belgium	1900	3,537,157	231,684,000	65.50	34.61		6,694,000
Canada[b]	1901	205,937	56,049,000	272.16	10.40	3	5,371,000
Holland	1899–1900	1,250,016	64,949,000	51.96	12.54		5,179,000
Sweden	1900	1,828,362	135,444,000	74.07	26.36	4 to 5	5,136,000
Australasia, including New Zealand	1900	1,162,261	176,142,000	151.55	38.82	2.5 to 3	4,537,000
Denmark	1900	1,150,233	177,433,000	154.25	72.45		2,449,000
Norway	1900	671,241	82,087,000	122.29	36.95		2,221,000
Total		66,383,587	6,661,067,000				
United States	1902	6,666,672	2,750,177,000	412.53	34.89	2.2 to 4.5	78,833,000
Grand total		73,050,259	9,411,244,000				

a Included with Germany, but not in total of the table.
b Post-office and Government savings banks only; $19,125,097 additional deposited with special savings banks, exclusive of amounts deposited with the savings branches of the chartered banks.

Statistics relating to foreign postal savings banks, which are incorporated in the foregoing table, with like information relating to trustee and other savings banks, have been obtained with respect to fourteen countries, including dependencies of the United Kingdom. The number of depositors in the foreign postal savings banks at date of returns, from 1899 to 1901, inclusive, is 23,436,711, and the deposits $1,466,601,083, an average account of $62.57. The returns relating to the postal savings banks are incorporated in the following table:

FOREIGN POSTAL SAVINGS BANK RETURNS.

[From official sources.]

Country.	Years.	Number of depositors.	Deposits.	Average deposits.
United Kingdom	1901	8,787,675	$683,222,126	$77.75
France[a]	1900	3,564,464	194,980,796	54.70
Italy	1899	3,664,618	121,204,000	33.08
Austria:				
Savings department	1901	1,547,541	30,355,244	19.62
Banking department	1901	46,345	48,110,713	1,038.10
Hungary:				
Savings department	1900	389,083	6,632,944	17.05
Banking department	1900	7,227	6,811,076	943.10
Australasia	1900	443,077	64,736,383	146.16
Belgium	1901	1,483,570	105,482,647	71.12
Canada	1901	167,368	39,950,813	238.87
Cape Colony	1901	98,873	16,278,627	164.13
British Guiana	1900	8,263	225,669	27.31
India	1900 1901	816,651	32,583,673	39.90
Netherlands	1900	829,131	34,048,200	41.06
Sweden	1901	583,395	14,537,172	24.92
Russia	1901	1,018,735	67,441,000	66.20
Total		23,436,711	1,466,601,083	62.57

a Data relating to the "Caisse Nationale d'e'pargne."

BANKING POWER OF THE WORLD.

The banking power of the world in 1890, that is, capital, surplus profits, note issues, and deposits, as stated by the late M. G. Mulhall, was £3,197,000,000, as follows:

United Kingdom, £910,000,000; continental Europe, £1,037,000,000; Australia, Canada, Cape Colony, Argentina, and Uruguay, £220,000,000, and United States, £1,030,000,000. In 1894 Mr. Maurice L. Muhleman calculated the banking power of the world at £3,915,000,000.

From statistics published by the London Chronicle, for June last, and incorporating therewith the most recent returns relating to the savings banks of the United Kingdom, the banking power of that country is shown to be £1,206,000,000, an increase of 32½ per cent since 1890. Assuming the same rate of increase in continental Europe, the English colonies, and Argentina and Uruguay, their power amounts to £1,374,000,000 and £292,000,000, respectively. The banking funds of Bulgaria, Greece, Roumania, Servia, and Turkey were not included in the Mulhall statement, but are given at £50,000,000 for the current year.

The capital, surplus profits, and circulation of all banks in the United States are definitely known and from reports obtained by the Comptroller of the Currency from national banks, State officials, and from the banks direct the deposits of over 77 per cent of banks in operation. The deposits of the remaining 23 per cent of the banks have been carefully estimated from data at command and give the aggregate banking power of the United States as £2,487,000,000, making the aggregate power of the world £5,409,000,000, or, say, $27,045,000,000, an increase since 1890 of $11,060,000,000, or 69.19 per cent.

The comparative statement for the two dates is given herewith:

Countries.	Year.		Increase.
	1890.	1902.	
			Per cent.
United Kingdom	£910	£1,206	32.52
Continental Europe	1,037	1,374	
Australia, Canada, Cape Colony, Argentina, Uruguay	220	292	
Bulgaria, Greece, Roumania, Servia, Turkey	.....	50	.....
United States	1,030	2,487	141.45
Total	3,197	5,409	69.19

The composition of the banking power of the United States, as shown by reports to the Comptroller of the Currency, supplemented by internal-revenue returns for the year 1902, appears in the following table:

Banks	Capital.	Surplus, etc., and deposits.	Circulation.	Total.
National banks	$701,990,554	$3,705,219,341	$309,336,599	$4,716,546,494
Mutual savings banks	.....	2,587,780,802	.....	2,587,780,802
All other banks	638,169,862	4,492,224,020	.....	5,130,393,882
Total	1,340,160,416	10,785,224,163	309,336,599	12,434,721,178

BOND AND ASSET SECURED BANK CIRCULATION.

The most serious objection which has been urged against the national bank currency is its lack of elasticity; that it does not automatically respond to the demands of business, but is dependent upon the price of bonds and other considerations. The first requirement of any currency is safety and uniformity in value. Our bank notes have been from the first issue practically perfect in this respect. No note holder has ever lost a dollar except by loss or destruction of the notes which have always circulated at their face value in all parts of the United States, being used without discrimination for payments of all kinds, the same as the legal tender and Treasury notes and other forms of paper currency. Our people have grown so used to bank notes with this prime and essential quality of uniformity in value that they have an instinctive prejudice against any change for fear this quality may be lost or impaired. For more than a generation we have had no bank notes but those secured by more than their full value of bonds deposited with the Treasurer of the United States. They have been so secure, it is not surprising there is a strong feeling that they are the only kind of notes which are perfectly secure.

There can be no denial of the fact, and there is really none made, that the lack of elasticity is a serious defect in our bank notes, which greatly reduces their usefulness not only under normal business conditions, but when there is danger of financial difficulty. If this defect can be remedied or lessened without impairing the safety of the notes it should be done, and done at once.

All bank-note circulation is really asset currency, and depends for its value upon the assets of the issuing bank. In most countries the banks are allowed to keep the assets, maintaining a certain reserve in coin and using the remainder for loans, or in any other way. Our national banks are required to use their assets, to the full amount of the circulation issued, in the purchase of bonds to be deposited with the Treasurer of the United States. This requires an amount of assets in excess of the circulation received. It makes a very safe circulation, but is a very wasteful use of the assets. The resulting notes fulfill none of the requirements of an efficient and satisfactory circulation but in their safety and uniformity in value.

If, in addition to the amount of notes they are now allowed to issue by law on bonds deposited in the Treasury, the national banks were allowed to issue an additional amount of uncovered notes, beginning with 20 per cent and gradually increasing to 50 per cent, it would make the circulation more expansible. A graduated tax on the amount issued, joined with ample provisions for their redemption and return to the issuing bank, would result in the necessary contraction when the circulation became redundant and the notes not needed in business. The safety of the notes can be made absolute by a reserve fund raised by a very small tax. During the almost forty years the national banking system has been in existence, the total amount of the notes of the banks which have failed, outstanding at the time of their failure, has been less than $21,000,000. During this same period the banks have paid in taxes on circulation above $90,000,000, or four and one-half times as much as would have been required to pay all these notes if the bonds had not done so. If there had been outstanding the full 50 per cent of uncovered notes suggested above, or $10,000,000

above those covered by the bonds, the taxes which have been paid would have been nine times the amount required to pay them, if, as would of course have been the case, the bonds had paid for the covered notes.

It has been urged against the idea of a guarantee fund that the strong banks would not take out the notes and pay the taxes for the benefit of the weaker banks. If the inducements to issue notes in the past have been sufficient to secure nine times the amount of taxes required, it is certainly a safe calculation that they will be sufficient in the future. In further confirmation of these figures, it is shown in the table prepared in this office for Mr. Fowler, chairman of the Committee on Banking and Currency of the House of Representatives, and included in his able report on H. R. 13363, that a tax of 0.22 per cent would have been sufficient to pay the notes of all failed national banks if the bonds had been lost or destroyed. The safety of the notes should be further increased by provisions that only banks with a minimum of unimpaired capital and surplus could issue the uncovered notes, and that the Comptroller of the Currency, or the Comptroller and the Secretary of the Treasury, should have discretion to refuse any bank, or all the banks, authority to issue additional uncovered notes. The period covering the whole history of the national banks is long enough to have established reliable averages, which can be as safely counted upon as the averages upon which the vast insurance business of the world is done. Any unusual variation would be amply provided for by the factor of safety of nine, which the figures given above show in the taxes paid during this whole period.

The present capital of all the national banks would permit the issue of about $140,000,000 of uncovered notes for the first issue of 20 per cent and the ultimate issue of $350,000,000 if the amount was increased to 50 per cent. These maximum figures would probably be increased by the increase in the number of national banks. By referring to the tables on pages 35 and 36 it will be seen that the tendency is for the increase of banks other than national both in the number and capital of banks and in the proportion of deposits held. An increase in the note-issuing privileges of the banks would doubtless check this gain of the outside banks if it did not turn the growth the other way.

The greatest demand for increased currency comes, of course, when it is required for moving crops in the farming States. If this can be supplied quickly and automatically as required by the banks in those States, and if, after performing its duty, it is returned to the banks and retired, it will mark a great advance in the improvement of our facilities for handling the vast and rapidly growing business of this country. The following tables show in a consolidated form the totals of the principal items in the bank statements in the farming States and of the United States, also the values of farm lands, farming implements, and live stock on the farms, with the value of all farm products for 1890 and 1900:

SUMMARY OF THE PRINCIPAL ITEMS OF RESOURCES AND LIABILITIES OF NATIONAL BANKS AND ALL OTHER BANKING INSTITUTIONS LOCATED IN THE SOUTHERN, MIDDLE WESTERN, WESTERN, AND PACIFIC STATES REPORTING TO THE COMPTROLLER OF THE CURRENCY IN 1892, 1897, AND 1902.

[In millions of dollars.]

SOUTHERN STATES.

	Loans.	Cash on hand.	Due from other banks.	Capital.	Individual deposits.
1892	307	44	50	136	283
1897	274	40	53	114	232
1902	504	54	126	137	481

MIDDLE WESTERN STATES.

1892	980	145	197	288	924
1897	844	159	241	276	881
1902	1,743	231	475	339	1,930

WESTERN STATES.

1892	182	24	44	79	155
1897	121	23	54	55	133
1902	263	33	105	60	316

PACIFIC STATES.

1892	271	27	25	87	240
1897	215	29	34	67	237
1902	317	52	96	66	464

TOTAL FOR FOUR DIVISIONS NAMED ABOVE.

1892	1,740	240	316	590	1,552
1897	1,454	251	382	512	1,483
1902	2,827	370	802	602	3,191
Increase 1902 over 1892	1,087	130	486	12	1,639

TOTAL FOR THE UNITED STATES.

	Loans.	Cash on hand.	Due from other banks.	Capital.	Individual deposits.
1892	4,337	586	684	1,071	4,665
1897	4,216	628	781	1,012	5,094
1902	7,169	839	1,552	1,198	9,082
Increase 1902 over 1892	2,832	253	868	127	4,417

VALUE OF LANDS, ETC., IN THE FARMING STATES.

[In millions of dollars.]

SOUTHERN STATES.

	Land, improvements, and buildings.	Implements and machinery.	Live stock.	Farm products for one year.
1900	2,887	158	689	1,226
1890	2,345	85	521	739
Increase	542	73	168	487

VALUE OF LANDS, ETC., IN THE FARMING STATES—Continued.

[In millions of dollars.]

MIDDLE WESTERN STATES.

1900	7,923	283	1,133	1,857
1890	5,924	201	926	907
Increase	1,999	82	207	950

WESTERN STATES.

1900	2,027	102	713	659
1890	1,286	55	385	229
Increase	741	47	328	430

PACIFIC STATES.

1900	1,138	53	196	274
1890	961	25	128	132
Increase	177	28	58	142

TOTAL FOR FOUR DIVISIONS NAMED ABOVE.

Total 1900	13,975	596	2,731	4,016
Total 1890	10,516	366	1,970	2,007
Increase	3,459	230	761	2,009

TOTAL FOR THE UNITED STATES.

Total 1900	16,674	761	3,078	4,739
Total 1890	13,279	494	2,309	2,460
Increase	3,395	267	769	2,279

In the latter half of each year the problem is presented to the banks to furnish currency needed to handle from 2,500 to 3,000 millions of bushels of grain, 8 to 10 million bales of cotton, and a corresponding quantity of other farm products. The total value of these products for the year 1902 will not be far from 5,000 millions of dollars. This calls for the use of a vast sum of money. Much of it is done on bank deposit credits, by means of checks, and the increased number of banks and better means of communication enable the people in country communities to handle more and more in this way, or we should not be able to transact such an amount of business at all. So much of it, however, must be handled with currency of some sort as to make a demand for currency in large amounts, and every year there is a great deal of anxiety, and often serious disturbance in business, until the crop season is over and the money returns to those who have had to furnish it. This is a matter of more importance to the man who needs the money than the man who furnishes it. When interest rates advance it is the man who pays the higher rate who suffers the most, not the man who has the money to lend.

The people in the country who do this enormous business and produce the great wealth are entitled to better service than they get, are in fact entitled to the very best facilities which can be devised and supplied to them. It can not be any undue inflation of credit to supply

these people who have just raised such quantities of the most readily salable staples the money they require in that form of bank credits represented by circulating notes. As the tables show, these people own land worth 16,674 millions of dollars, farm implements worth 761 millions, live stock worth 3,078 millions, and raise over 4,000 million dollars worth of products. In the farming States there are banks with over 600 millions of capital and 70 millions of surplus. They have on hand in cash 370 million dollars, and due from other banks 802 millions. Here are agencies enough to perform this work and abundant basis for the credits if the law permitted it. We place no limit on the loans they may make but that supplied by reserve requirements on the deposits; why should they not supply a limited amount of notes secured by two-thirds their value in bonds and made absolutely safe to the note holder by the guarantee fund raised by the tax on circulation? Such a change in the currency would not only supply the needs for crop moving, but also the currency needed for other business.

Each bank could supply what it found was necessary for its own customers. The demand which generally begins in the late summer months would gradually be met as it came. In every community the supply would be in the hands of men who are familiar with local needs and conditions and the distribution would be made where and when needed without reference to conditions elsewhere or dependence on the money market in the reserve cities and financial centers. This would be of great benefit, not only to the people in farming districts and those handling farm products, but to the vast number of business men engaged in mining, manufacturing, mercantile and commercial lines. Instead of the whole business public dreading the approach of the crop-moving time for fear there might come some stringency in the money market to upset their calculations and interfere with their financial arrangements, the banks would be in position to furnish the currency needed for the crops when and where it was to be used without disturbing business in other lines.

In times of panic the power to issue additional notes would be an element of great strength to the banks and not of weakness. It would enable the banks to protect themselves and their customers when protection is most needed. Panics or financial crises come generally very suddenly and as the result of fear which spreads among the people that they will not be able to get money to meet their payments and conduct their business. This spreads and forces liquidation of credits which otherwise would have remained outstanding. There never is a time when the liquidation of all credits or any large proportion of those outstanding is possible without producing a crisis. As long as there is confidence, and each individual feels secure that he can get what money he needs upon usual terms and security, there is no necessity for it. If our bank circulation can be made more automatically elastic so that the banks can supply more or less of circulation as needed, which is so safe and reliable that it is readily accepted and used for all business transactions, we will have a force at work in our financial affairs which will diminish the liability of a money panic, and will be an efficient aid when we shall have an actual condition of panic.

Without discussing the causes which led to the panic of 1893 and the depression which followed there is no question but that the actual shape the panic took was a sudden demand for currency. Referring

to the table on page 37 giving the total money and currency of all kinds in circulation in the United States, the amounts held in the Treasury as assets and in the banks with the amount not in the Treasury or banks, that is, in use by the people, it will be seen that the proportions do not vary greatly in normal times. The greatest variation is in the amount in the Treasury as assets, which, from various causes, has ranged from 8 to 16 per cent in ten years. The amount held by the banks is ordinarily from 32 to 33 per cent. This ran down to 29 per cent during the panic year of 1893 and in 1896, when the silver question was involved in the election, and increased to 38 per cent in 1894 in the reaction following the panic. The amount of money outside, in circulation among the people, has run quite uniformly from 53 to 55 per cent, but during the panic year of 1893 this went up to 62 per cent, showing the withdrawal of coin and currency due to the panic. During the panic all sorts of substitutes for currency were resorted to, which were accepted and used for the time.

How much better prepared we would have been if the banks had been able to supply a large volume of good notes. It is not claimed that this would have prevented that panic or that panics may be prevented in the future by such means, but the tendency or liability to panics will be appreciably diminished if our banks have such a reserve power furnished them, and when panics occur we will be better prepared to meet them and mitigate their force and effect. This currency should be immediately and quickly available, so that the banks need not wait for serious trouble before they begin to issue it. The conditions of issue should not be such as to make it a confession or indication of weakness for a bank to issue the notes. They should be coming and going all the time, in accordance with the demands of business. Such notes would be much preferable to any form of clearing-house notes or emergency circulation issued by clearing houses or similar associations, because each bank could quickly issue its own quota without waiting for the slow process of consultation, and the average result obtained by the independent action of banks in all parts of the country would more nearly respond to the actual demands and necessities.

The currency here outlined is what has come to be called in the recent discussions an emergency circulation. It would be better than this; it would be a currency which would prevent many emergencies from arising, or so diminish their seriousness that they would pass unnoticed. When emergencies did arise it would very greatly add to our equipment and ability to meet them.

This plan for the modification of the national-bank currency is not offered as anything new. It has been suggested often before, widely discussed, and bills embodying these general features have been before Congress for several years. It is not claimed that this plan would remedy all the defects in our currency system, but it is urged as a practical and simple method of improving the national-bank currency by giving it the much-needed quality of elasticity without impairing its safety. If we wait until there is agreement on all points before we make a change in our currency laws, we will never make any reform. If we make such changes from time to time as study and investigation convince us can be safely made and are advisable, we are much more apt to arrive at a satisfactory law than if we wait until it can all be reformed in one act.

The Comptroller therefore calls the attention of Congress to this subject, asks its careful consideration, and strongly recommends the passage of an act embodying the main features here outlined.

WM. B. RIDGELY,
Comptroller of the Currency.

To the SPEAKER OF THE HOUSE OF REPRESENTATIVES.

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REPORT OF THE REGISTER OF THE TREASURY.

TREASURY DEPARTMENT,
OFFICE OF THE REGISTER,
Washington, D. C., September 11, 1902.

SIR: I have the honor to submit the annual report of the operations of this office for the fiscal year ended June 30, 1902.

The business of the office is divided between two divisions, viz, Division of Loans, and Division of Notes, Coupons, and Currency.

DIVISION OF LOANS.

On the 1st of July, 1901, there were 20 employees in the division, which number was reduced by 2 during the year. It now consists of 1 chief, 15 clerks, and 2 messengers, total 18, being an increase of 1 over the number employed before the bond issue of 1898 and the refunding operations later. The work of the division pertains exclusively to the public debt of the United States, and includes among its principal items: First, the receipt of new coupon and registered bonds prepared by the Bureau of Engraving and Printing, and the custody of the same until required for issue. Second, the issue of all bonds, whether on account of moneys deposited for their purchase or, in the case of registered bonds, when transferred from one owner to another, or when issued in exchange for coupon bonds. Third, making a record of all bonds redeemed or canceled on account of transfers and exchanges. Fourth, keeping accounts with each holder of registered bonds. Fifth, the declaration of interest on all registered bonds once every three months, together with the preparation of schedules for drawing and mailing checks in payment thereof. Sixth, the examination and recording of authorities presented for the assignment of registered bonds.

After the bonds for issue have been printed they are delivered to the Secretary of the Treasury, who in turn delivers them to this office through the Division of Loans and Currency, taking a receipt therefor. They are then placed in the vault in custody of the vault clerk, who enters all receipts upon the vault ledger, keeping each series and the denominations in each series of bonds separate and distinct from each other. As the bonds are needed for daily use by the clerks of the division, requisition is made upon the vault clerk for same, and he takes the receipt of the clerk to whom the daily supply is delivered for all bonds that leave his custody. The vault ledger at all times shows amount on hand, number of sheets comprising the amount, and the denominations of the various bonds in stock.

The principal work of the division, aside from the labor entailed by an original issue, is the transferring of bonds from one person to another, and the exchanging of coupon bonds into registered bonds. Each day the mails and the express companies deliver to the office packages containing bonds for transfer, varying from twenty-five to three times that number. Then, through the local banks, by messenger, and through other bureaus of the Department, packages of bonds are received throughout each working day, all intended for transfer and aggregating millions in amount. The assignments on the back of the bonds are examined carefully to see that they have been properly executed, and if said assignments have been made by an administrator, executor, or attorney, the records are examined to determine whether the necessary authority for the transfer is on file. In cases where assignments are made by legal representatives of a deceased person, probate certificates under seal of the court, showing the appointment of such representative must be on file in this office. Where assignments are made by attorneys, the original power of attorney must be filed before the acts of the attorneys will be recognized. In cases of banks, trust companies, associations, lodges, etc., assignments can only be made by some person authorized to act by a resolution adopted by the board of directors, or other governing body, a certified copy of that resolution first being filed with this office. It is a task of some magnitude to keep these authorities properly indexed and in shape for immediate consultation. The card-index system has been found most convenient and valuable for this purpose, and at present the authority clerk has some 30,000 cards in use, with the list growing daily. If the assignments are found to be correct in every detail, new bonds are issued to the payees mentioned in the assignments, and the bonds are forwarded to the addresses that are given in the letters transmitting the bonds for transfer. Should the assignments be defective in any particular, the shipper is immediately corresponded with and told just what the error is and how to remedy it. It has for years been the policy of the office to clear up the work on all desks in this division each day, as well as answer all correspondence the day the letters are received, so there is never on hand any unfinished work, except such cases as can not be forwarded because of errors in assignment, etc.

When the cases have been finally acted upon by the examiners, new bonds are issued and the old bonds are canceled and placed in the files of the office, in such form as to be immediately available in case it is necessary to call them up for reference, or for any purpose whatever. All papers accompanying a transfer case are filed with it, and the Department, through these complete cases, is enabled to trace the ownership of a registered bond and its transfer from one owner to another, no matter how many hands it may have passed through between the original issue and the last transfer.

While on this subject, I should like, if possible, to impress upon the owners of bonds the fact that an assignment is not a transfer. Many persons after assigning a bond notify this office that they have transferred bonds to another person, and ask that the transfer be made to the new owner on the books of the Department, and that interest checks be sent to the new address. No request of such character can be complied with, as interest checks are always drawn to the order of the person owning the bonds as shown by the books of this office, and as transfers can only be made here after the bonds assigned have been

surrendered, it is obvious that the holder of a bond that may have been assigned, but not transferred to him, will receive no interest unless it is paid to him by the person from whom he purchased the bond, who will receive it from the Department.

A ledger account is kept with all holders of United States registered bonds, and as these holders buy or sell, their accounts are credited or debited as the case may be, just as in the case of a merchant who keeps accounts with his customers. It requires 78 large ledgers, each containing over 700 pages and averaging three accounts to a page, to contain the accounts of the holders of the 4 per cent funded loan of 1907 alone, and, as an example of expert bookkeeping, I make the statement that all of these books are kept by one clerk, who looks after the details of the loan, such as examining the assignments, preparing the bonds for transfer, and compiling the interest schedule each quarter. With but one assistant the clerk attends to the whole loan. In contrast to the books mentioned above, I mention the accounts of the 2 per cent consols of 1930. When the refunding act went into effect it was determined to try the card system of bookkeeping rather than multiply the large books which were bidding fair to occupy all of the available space in the office. Again, it was considered that any plan that would simplify the bookkeeping and at the same time throw all essential safeguards around the keeping of the accounts of the Government with its bondholders would be a good thing for all concerned, and after a great deal of study a system was evolved and cards prepared in accordance therewith that has proven highly satisfactory. Instead of the cumbersome ledgers and journals in use on the other loans, the clerk handling the cards makes the journal and ledger entries on the card at the same time, and never has to leave the desk to refer to large books. The cards are all contained in the drawers of the clerk's desk, and at least one-third has been gained in time, to say nothing of the labor saved. The experiment has proved to be a success, and the problem of utility and time and labor saving in the method of handling accounts has been solved, so far as this office is concerned.

The preparation of the interest schedules each quarter is a work requiring great accuracy and as great expedition. For a certain period before a dividend is declared (one month in two cases and fifteen days in others), the books are closed against transfers, in order that the interest schedules from which the checks are drawn each quarter may be prepared. As this involves a general rearrangement of the schedules each quarter, to conform to the increase or decrease, as the case may be, of the holdings of various subscribers to the different loans, and as the first pages of the copy must be in the hands of the printer on the morning after the books close, it will be seen that expedition, accompanied by care and accuracy, is necessary on the part of the employees of the division, in order that there may be no delay in the transmission of the checks to the persons entitled to them on the day the interest is due. The preparation of these schedules necessitates the revision of nearly 60,000 accounts.

The year just closed has not been marked by the extraordinary changes in the public debt which signalized the three years which preceded it, but the work involved has been somewhat greater than that of an average year when ordinary conditions prevail. The adjustment of the ownership of the public debt, owing to the great changes produced by the refunding of the debt at 2 per cent, was not completed

at the beginning of the fiscal year, but continued during the whole period. So large a reduction in the amount of interest obtainable from a given investment, necessarily resulted in important changes from one class of owners to another. Yet it may be observed that those who took the 2 per cent bonds were for the most part the larger holders, and the difference in the amount of work was less than would naturally be inferred from the magnitude of the amounts involved. Besides this, the refunding operations left behind numerous items of work in preparing and arranging the documents for permanent preservation in the best form. This work has been carried on whenever any part of the office force of this division was available for the purpose.

The stock of unissued bonds on hand at the beginning of the year was in most respects sufficient to last during the year. The only receipts were 400 bonds of the Fifty-year funded loan of the District of Columbia, due in 1924, at 3.65 per cent, and representing a value of $1,200,000.

The two following tables show the number and amount of bonds issued and canceled during the year in connection with the various loans of the United States and the 3.65 per cent loan of the District of Columbia. The latter is the only loan of the District of Columbia now outstanding which was issued by authority of Congress:

NUMBER AND AMOUNT OF BONDS ISSUED DURING THE YEAR ENDED JUNE 30, 1902.

Loan.	Class.	Direct issues.	Exchanges.	Transfers.	Number of bonds.	Total amount.
Loan of 1904, 5 per cent	Registered		$537,800	$1,941,050	1,415	$2,478,850
Funded loan of 1907, 4 per cent	Coupon	$1,050			10	1,050
	Registered	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Loan of 1908–1918, 3 per cent	Coupon	20		40	3	60
	Registered		4,039,820	9,336,100	7,875	13,375,920
Loan of 1925, 4 per cent	do		2,192,100	13,672,400	3,772	15,864,500
Consols of 1930, 2 per cent	do		3,165,900	65,176,000	11,146	68,341,900
District of Columbia, Fifty-year funded loan of 1924, 3.65 per cent.	do		14,000	1,144,000	354	1,158,000
Total		2,370	10,859,970	106,378,190	31,067	117,240,530

NUMBER AND AMOUNT OF BONDS CANCELED DURING THE YEAR ENDED JUNE 30, 1902.

Loan.	Class.	Redemptions.	Exchanges.	Transfers.	Number of bonds.	Total amount.
Oregon war debt, 6 per cent	Coupon	$100			1	$100
Five-twenties of 1862, 6 per cent	do	100			1	100
Loan of 1863, 6 per cent	Coupon	1,000			1	1,000
	Registered	3,000			3	3,000
Consols of 1867, 6 per cent	Coupon	1,700			10	1,700
Funded loan of 1881, 5 per cent, continued at 3½ per cent.	Registered	100			1	100
Funded loan of 1891, 4½ per cent	do	6,250			9	6,250
Funded loan of 1891, 4½ percent, continued at 2 per cent.	do	138,400			42	138,400
Loan of 1904, 5 per cent	Coupon	1,538,700	$537,800		2,233	2,076,500
	Registered	1,105,150		$1,941,050	1,824	3,046,200
Funded loan of 1907, 4 per cent	Coupon	2,608,950	910,350		6,703	3,519,300
	Registered	22,329,950		15,108,600	11,098	37,438,550
Loan of 1908–1918, 3 per cent	Coupon	911,820	4,039,820	40	13,368	4,951,680
	Registered	1,126,940		9,336,100	9,918	10,463,040
Loan of 1925, 4 per cent	Coupon	6,589,500	2,192,100		9,121	8,781,600
	Registered	20,731,700		13,672,400	5,704	34,404,100
Consols of 1930, 2 per cent	Coupon		3,165,900		3,302	3,165,900
	Registered			65,176,000	8,627	65,176,000
District of Columbia, Fifty-year funded loan of 1924, 3.65 per cent.	Coupon	13,750	14,000		105	27,750
	Registered	523,000		1,144,000	471	1,667,000
Pacific Railroads, 6 per cent	Registered	13,000			5	13,000
Total		57,643,110	10,859,970	106,378,190	72,547	174,881,270

During the fiscal years 1865, 1866, 1867, 1868, and 1869 the Government issued bonds amounting to $64,623,512 in aid of the construction of the several Pacific railroads, which were payable in thirty years from date of issue. The payment of $13,000 of these bonds during the past year completes the redemption of this loan.

NUMBER AND AMOUNT OF BONDS, IN SUMMARY FORM, ISSUED AND CANCELED, AND THE TOTAL NUMBER HANDLED DURING THE LAST TEN YEARS.

Year.	Bonds issued.		Bonds canceled.		Total handled.	
	Number.	Amount.	Number.	Amount.	Number.	Amount.
1892–93	15,796	$59,396,050	24,943	$60,271,850	40,739	$119,667,900
1893–94	64,799	163,551,900	36,195	114,277,200	100,994	277,829,100
1894–95	80,362	195,445,950	43,072	110,513,200	123,434	305,959,150
1895–96	143,476	258,595,350	64,579	136,941,450	208,055	395,536,800
1896–97	33,704	129,612,500	49,731	143,185,450	83,435	272,797,950
1897–98	35,816	153,749,100	49,669	185,955,102	85,485	339,704,202
1898–99	579,182	423,111,950	240,263	240,299,560	819,445	663,411,510
1899–1900	51,343	599,864,780	185,531	563,950,650	236,874	1,123,815,430
1900–1901	105,149	648,324,020	149,523	702,872,960	254,672	1,251,196,980
1901–2	31,067	117,240,530	72,547	174,881,270	103,614	292,121,800

After the completion of the refunding of the bonds of the 3 per cent loan of 1908–1918, the 4 per cent funded loan of 1907, and the 5 per cent loan of 1904 into the 2 per cent consols of 1930, as mentioned in my last report, the Secretary of the Treasury, by letters dated April 2, April 3, and October 31, 1901, authorized the purchase of bonds of the above-named loans and of the 4 per cent loan of 1925. These bonds appear upon the books of this office at dates somewhat later than the delivery to the Department, as all redeemed coupon bonds are examined in the office of the Auditor for the Treasury Department before entry on the books of this office. The following table shows the amount of bonds of these loans purchased under the authority mentioned:

AMOUNT OF BONDS PURCHASED BY AUTHORITY OF THE SECRETARY OF THE TREASURY.

Loan.	Year.	Coupon.	Registered.	Total.
Loan of 1904, 5 per cent	1900–01	$114,450	$769,750	.....
	1901–02	1,538,700	1,105,150	$3,528,050
Funded loan of 1907, 4 per cent	1900–01	.....	12,245,800	.....
	1901–02	2,608,950	22,329,950	37,184,700
Loan of 1908–1918, 3 per cent	1900–01	45,700	312,840	.....
	1901–02	911,820	1,126,940	2,397,300
Loan of 1925, 4 per cent	1901–02	6,589,500	20,731,700	27,321,200
Total	.....	11,809,120	58,622,130	70,431,250

SPANISH INDEMNITY CERTIFICATES.

Under the treaty of February 17, 1834 with Spain, the sum of $599,850.28 was awarded to American citizens, under the sanction of the Spanish courts, on account of seizure and confiscation of vessels and cargoes belonging to such citizens. The United States agreed to receive from Spain the principal and interest of this debt, and to distribute it to the rightful owners whenever it was paid to this Government. No payment has ever been made on the principal, but during most years the sum of $28,500 has been received through the Department of State from Spain, and divided pro rata among the holders of the stock. The last dividend of this character was declared

December 27, 1900. There are at present eighty-two holders of these certificates.

The following table shows the transfers of Spanish indemnity certificates from one owner to another during the last nine years:

TRANSFER OF SPANISH INDEMNITY CERTIFICATES.

Year.	Issued on transfers.		Canceled on transfers.	
	Number of bonds.	Amount.	Number of bonds.	Amount.
1893–94	9	$44,523.95	8	$44,523.95
1894–95	4	12,306.53	3	12,306.53
1895–96	4	39,556.94	4	39,556.94
1896–97	8	28,475.78	8	28,475.78
1897–98	51	54,443.68	11	54,443.68
1898–99	2	12,067.06	2	12,067.06
1899–1900	140	500,147.03	110	500,147.03
1900–1901	138	181,282.11	89	181,282.11
1901–2	19	15,094.65	9	15,094.65

During the year the following redeemed coupon bonds issued by the District of Columbia when under a Territorial government, which had been paid by the Treasurer of the United States, were recorded on the books of this office:

DISTRICT OF COLUMBIA COUPON BONDS REDEEMED DURING THE YEAR ENDED JUNE, 30, 1902.

Loan.	Number of bonds.	Amount.
Thirty-year funded loan of 1902, 6 per cent	36	$35,500
Ten-year loan (Bowen), 6 per cent	1	50
Water-stock loan, 7 per cent	320	320,000
Total	357	355,550

Elsewhere in this report it has been stated that one of the important duties devolving upon the office is the preparation each quarter of the interest schedules for the various loans. Upon all the current United States loans the interest is payable quarterly. The interest on the 4 per cent funded loan of 1907 and the 2 per cent consols of 1930 is due on the 1st of January, April, July, and October of each year, and the books are closed against the transfer of bonds of these loans during a period of one month prior to each of said dates, in order that the schedules may be readjusted to meet the changes in ownership of bonds that have occurred during the quarter, and in order that they may be reprinted, compared, and delivered to the Treasurer of the United States, who from them draws the checks, and who must have them in time to complete his work and have the checks ready for the mails the evening before the interest is due. This necessitates rapid work, but it is a source of gratification to be able to state that notwithstanding the speed with which the work is performed, and notwithstanding the fact that the clerical force engaged in their preparation is small, there has never been any delay in the prompt delivery of the completed schedules to the Treasurer of the United States, nor have there ever been any serious errors committed in their preparation.

The interest is always declared in favor of the persons who own the

bonds as shown by the books of the division at the beginning of the closed period, and if assignment of bonds is made during this period, with an understanding that the interest is to go to the assignee, he will have to collect it from the assignor, in whose favor it is declared.

The interest on the 3 per cent loan of 1908-1918, the 4 per cent loan of 1925, and the 5 per cent loan of 1904, is payable on the 1st of February, May, August, and November of each year. The books of the first-mentioned loan close for one month, and on the two latter loans for fifteen days before the interest is due. The interest on the District of Columbia 3.65 per cent bonds is payable semiannually, on the 1st of February and August, the books being closed for a period of ten days before the declaration of a dividend.

During the fiscal year the schedules for the drawing of interest checks upon registered bonds have been prepared in the office and delivered to the Treasurer of the United States as follows:

DIVIDENDS OF INTEREST.

Date payable.	Loan.	Number of checks.	Principal.	Amount.
1901.				
August 1	Loan of 1904, 5 per cent	1,393	$11,444,700	$143,058.75
Do	Loan of 1908–1918, 3 per cent	28,052	47,642,140	357,316.05
Do	Loan of 1925, 4 per cent	3,756	123,315,850	1,233,158.50
Do	District of Columbia, fifty-year funded loan of 1924, 3.65 per cent.	264	13,340,000	243,455.00
October 1	Funded loan of 1907, 4 per cent	20,317	201,023,400	2,010,234.00
Do	Consols of 1930, 2 per cent	5,720	433,865,050	2,169,325.25
November 1	Loan of 1904, 5 per cent	1,370	11,250,800	140,635.00
Do	Loan of 1908–1918, 3 per cent	27,687	47,914,460	359,358.45
Do	Loan of 1925, 4 per cent	3,713	115,785,000	1,157,850.00
1902.				
January 1	Funded loan of 1907, 4 per cent	19,946	191,462,000	1,914,620.00
Do	Consols of 1930, 2 per cent	5,800	435,171,600	2,175,858.00
February 1	Loan of 1904, 5 per cent	1,351	10,898,900	136,235.00
Do	Loan of 1908–1918, 3 per cent	27,268	48,367,300	362,754.75
Do	Loan of 1925, 4 per cent	3,646	107,613,800	1 076,138.00
Do	District of Columbia, fifty-year funded loan of 1924, 3.65 per cent.	256	13,333,000	243,327.25
April 1	Funded loan of 1907, 4 per cent	19,672	184,987,550	1,849,875.50
Do	Consols of 1930, 2 per cent	5,954	435,436,650	2,177,183.25
May 1	Loan of 1904, 5 per cent	1,319	10,731,650	134,145.62
Do	Loan of 1908–1918, 3 per cent	26,805	49,432,380	370,742.85
Do	Loan of 1925, 4 per cent	3,670	103,960,650	1,039,606.50
July 1	Funded loan of 1907, 4 per cent	18,509	182,547,950	1,825,479.50
Do	Consols of 1930, 2 per cent	6,105	436,251,700	2,181,258.50
	Total	232,603	3,215,776,530	23,301,615.72

All of the bonds received from the Bureau of Engraving and Printing, through the Secretary's office, are kept in the vault connected with the division, and are distributed to the clerks for use as they are needed in the daily routine, as shown in an earlier portion of this report. As changes are constantly taking place in the ownership of bonds, necessitating the cancellation of the bonds disposed of by the owners, and the reissue of new bonds in the names of the new owners, and as the process of printing bonds is a slow one, requiring several months ordinarily, it is necessary that enough unissued stock to meet every emergency that may possibly arise during the year be kept on hand. At the close of the fiscal year an invoice of the stock in the vault was made, the count agreeing in every particular with the condition of the contents of the vault as shown by the vault ledger. At that time there were stored in the vault in bonds of all loans and

denominations, sheets aggregating in amount $1,254,219,340, as shown in detail by the subjoined table. The responsibility of the custodian of this vault, containing as it does this vast amount of securities, is great, and it is for this reason that the recommendation has elsewhere been made that his salary should be augmented to the extent of that of other vault custodians throughout the Department. He is not only responsible for the safety of the contents of the vault, but he must at all times see that the stock on hand is equal to all possible demands, and must be able to tell at a moment's notice just what stock is in his possession.

The following table covering this point at the close of the fiscal year is interesting:

UNISSUED BONDS ON HAND IN THE OFFICE OF THE REGISTER OF THE TREASURY, AT THE CLOSE OF BUSINESS JUNE 30, 1902.

Loan, etc.	Class.	$20.	$50.	$100.	$500.	$1,000.	$5,000.
Loan of 1904, 5 per cent	Registered	.....	6,365	1,218	.....	3,567	.....
Funded loan of 1907, 4 per cent	Coupon	.....	534	941	97	99	.....
	Registered	.....	1,551	4,531	3,993	9,462	2,554
Loan of 1908–1918, 3 per cent	Coupon	1,055	.....	5,939	3,144	[illegible]	.....
	Registered	11,047	.....	1,289	3,086	[illegible]	6,851
Loan of 1925, 4 per cent	.....do	.....	9,165	3,412	5,474	3,182	1,428
Consols of 1930, 2 per cent	Coupon	.....	817	1,129	1,125	5,791	.....
	Registered	.....	1,048	5,174	5,717	21,327	4,340
District of Columbia, fifty-year funded loan of 1924, 3.65 per cent	.....do	.....	.....	.....	.....	68	10
Spanish indemnity certificates		.....	.....	.....	.....	.....	.....
Total		12,102	19,480	23,633	22,636	72,367	15,153

Loan, etc.	Class.	$10,000.	$20,000.	$50,000.	All denominations.	Amount.
Loan of 1904, 5 per cent	Registered	732	.....	.....	11,882	$11,327,050
Funded loan of 1907, 4 per cent	Coupon	.....	.....	.....	1,671	268,300
	Registered	3,217	454	979	26,741	114,959,150
Loan of 1908–1918, 3 per cent	Coupon	.....	.....	.....	24,618	16,667,000
	Registered	26,902	.....	.....	63,536	319,408,840
Loan of 1925, 4 per cent	.....do	1,900	.....	.....	24,561	32,858,450
Consols of 1930, 2 per cent	Coupon	.....	.....	.....	8,862	6,507,250
	Registered	62,215	.....	1,670	101,491	752,105,300
District of Columbia, fifty-year funded loan of 1924, 3.65 per cent	.....do	.....	.....	.....	78	118,000
Spanish indemnity certificates		.....	.....	.....	452	.....
Total		94,966	454	2,649	263,892	1,254,219,340

PACKAGES RECEIVED AND SENT.

During the year this office received by registered mail 3,665 packages containing bonds to the amount of $41,992,137.92. This does not include the many packages received by regular mail, express, through other bureaus, and from local sources. There were sent from the office by registered mail during the year, 6,965 packages containing bonds to the amount of $55,927,023.40.

The fact that more packages, aggregating a greater amount, were sent from the office by registered mail than were received through the same channel is accounted for in this wise: A package received frequently contains bonds for transfer to several different persons located at different post-offices, the instructions accompanying the bonds directing this office to forward the new bonds direct to the payees. As a

consequence, several packages are sent out where but one was received. Then, bonds are received from various other bureaus during the course of a day's business, and also from local sources—banks, brokers, and individuals in the city, who send in their stock by messenger or bring it in person. Of course, all these cases are treated as of local delivery so far as this office is concerned, but in the shipments of the day many of them appear as having been forwarded from the office by registered mail.

It would be well if the business houses and individual shippers of bonds would understand that all *registered* bonds intended for transfer from one person to another should be forwarded direct to the Register of the Treasury, while *coupon* bonds for exchange into registered bonds should be forwarded to the Secretary of the Treasury, Division of Loans and Currency. A universal observance of this rule will insure prompter service to the parties interested, and will relieve the records of other bureaus of much matter in which they have no interest.

Another general rule that it would be well for shippers of bonds to remember is that when bonds of different loans are forwarded for transfer a separate letter of transmittal should accompany each class of bonds. There is no objection to forwarding bonds of different loans in one package, but as each class of bonds is filed to itself, and as each case must be accompanied in the files by a letter of advice, it is obvious that where but one letter is mailed with several classes of bonds it devolves upon this office to make copies of that letter, or return the bonds to the shipper in order that his work may be completed.

There is still another regulation which dealers in United States bonds very often fail to observe. Coupon and registered bonds are frequently forwarded to this office in one package with one letter of transmittal. A purchaser asks his dealer to procure for him $1,000 in registered bonds of some particular loan. The dealer has on hand $500 in registered and a like amount in coupon bonds. He forwards these bonds to this office with the request that a registered bond for $1,000 be issued in the name of his client. But $500 (the registered bond) should have been forwarded to the Register, accompanied by a letter stating that $500 in coupon bonds was being forwarded to the Secretary of the Treasury by the same mail for exchange into registered bonds for his client. All coupon bonds intended for exchange must be forwarded to the Secretary of the Treasury, and where the shipper neglects to observe the regulation it devolves upon this office to perform his work for him.

FOREIGN HOLDINGS.

An impression seems to prevail throughout the country that a large proportion of the bonds issued by the United States are in the hands of foreigners, meaning by that term nonresidents of this country. This is made manifest by the number of inquiries received at this office relative to the amount of bonds held by foreigners.

Heretofore the Department has not been able to answer these queries, except in a general way to state that the amount of foreign capital invested in United States governmental securities is relatively small. At one time years ago when the civil war debt was being refunded and the 4 per cent funded loan of 1907 was being issued, a great deal of foreign money was invested in bonds of this country.

But the conditions existing at that period of this country's history have changed. Home capital now seeks and owns home securities, and the foreigner is no longer our creditor, except in a very small way.

It has been thought best to prepare for this report an analysis of the various loans in order to determine in an approximately correct manner the proportion of United States bonds held by foreigners. The result of that analysis is interesting and is presented on page 13.

The ability and willingness of the people of the United States to tender their means in support of their Government was made apparent by the issue of the 3 per cent loan of 1908–1918—the Spanish war loan, so called—when over $198,000,000 (the money of the people of the United States, scattered from Maine to the Gulf, and from the Atlantic to the Pacific) was deposited with the Secretary of the Treasury in exchange for the "promise to pay" of the United States, at an annual rate of interest at 3 per cent. It is a well-known fact that enough money was tendered the Secretary to purchase many times $200,000,000 in bonds, and he was under the necessity of returning the excess to the subscribers, only the amount first mentioned being needed. Not a dollar of the bonds issued to maintain the expenses of the Spanish war went abroad, and almost $100,000,000, or half the amount issued, was in bonds ranging in denomination from $20 to $500, the small subscribers being given the first option.

In July, 1899, an analysis of the loan disclosed the fact that $527,500 of the 3 per cent bonds had been bought in the market by foreigners, not by individuals, but by insurance companies in the three countries, England, Germany, and Holland, which were compelled to deposit United States bonds with the superintendent of insurance in the various States of the Union before being allowed to do business in those States. The analysis this year discloses the fact that $915,000 in this loan are held by insurance companies in England, Germany, Holland, and New Zealand, out of a total of $49,432,380. The individual foreign holdings are not apparent, though it is possible a few bonds may be held by residents of Cuba, the interest checks being sent to attorneys in New York. In such cases the Department would be unable, of course, to properly classify the holdings, and they would be treated as domestic.

The present analysis shows that out of a total of $782,924,330 but $16,022,850 is held by foreigners, and of this latter amount $12,578,000 are held by insurance companies and are on deposit with the superintendent of insurance in the various States of the Union. These deposits are required in order that the policy holders in the States wherein the companies do business may be secured from loss. This leaves the individual foreign holdings of United States bonds but $3,444,850.

The bonds most largely held by foreign insurance companies are those of the 4 per cent loan of 1925 (long fours). The insurance companies of England, Germany, Switzerland, China, Scotland, and Sweden, have on deposit in this country bonds of this loan to the amount of $5,617,000, while individuals in those countries, together with those of France, Cuba, and Canada, own $250,900 in bonds.

The 2 per cent consols of 1930 is the next most popular loan for foreign investment. There are no individual foreign holders of bonds of this loan, but the insurance companies of England, Russia, Canada, and Germany have on deposit $3,255,000.

Next in popularity is the 4 per cent Funded loan of 1907. This is

the oldest loan now extant, and at one time was quite largely held by foreigners. It is still the favorite for individual investors. Owners of these bonds to the extent of $5,940,450 are scattered over the countries of England, Ireland, Germany, Holland, France, Cuba, Scotland, Canada, Spain, British Columbia, Switzerland, Greece, Mexico, Sicily, New Zealand, Central America, Sweden, Norway, China, Nova Scotia, Hungary, New Brunswick, Jamaica, and Russia, and reside in ninety towns. Insurance companies in six of these countries, namely, England, Germany, Holland, Scotland, New Zealand, and Russia, hold $2,765,500 of the bonds of this loan, while the individual holdings amount to $3,174,950.

The 5 per cent loan of 1904 now amounts in registered bonds to but $10,731,650. Of this amount, $44,500 is held by residents of England, Germany, and Switzerland, insurance companies owning $25,500 and individuals $19,000.

This analysis applies only to registered bonds, as there is no way of determining the amount of coupon bonds held abroad.

DOMESTIC HOLDINGS.

An analysis has also been made of the domestic holdings, with the following result:

There are on deposit with the Treasurer of the United States in trust for the various national banks of the country, $428,145,980. The national, State, and savings banks hold, in addition to the above amount, $80,656,070, making a total of $508,802,050 belonging to the banks. The insurance and trust companies own $16,809,200; the lodges hold $836,840; societies have a total of $2,969,400, and individuals own $237,483,990.

The subjoined table gives in compact form the result of the analysis, showing the total foreign and domestic holdings outstanding and the division of the domestic holdings:

LOANS AS TO FOREIGN AND DOMESTIC HOLDINGS.

Loan.	Foreign.			Domestic.		
	Held by insurance companies.	Held by individuals.	Total foreign.	Treasurer United States in trust.	Banks.	Insurance and trust companies.
Funded loan of 1907, 4 per cent	$2,765,500	$3,174,950	$5,940,450	$14,369,250	$36,401,800	$4,031,450
Loan of 1908–1918, 3 per cent	915,000	.....	915,000	9,473,080	2,519,020	495,300
Consols of 1930, 2 per cent	3,255,000	.....	3,255,000	394,533,900	7,990,800	4,077,000
Loan of 1904, 5 per cent	25,500	19,000	44,500	943,400	185,800	420,050
Loan of 1925, 4 per cent	5,617,000	250,900	5,867,900	8,826,350	33,558,650	7,785,400
Total	12,578,000	3,444,850	16,022,850	428,145,980	80,656,070	16,809,200

Loan.	Domestic.			Total domestic.	Total outstanding.
	Lodges.	Societies.	Individuals.		
Funded loan of 1907, 4 per cent	$74,650	$1,387,600	$120,342,750	$176,607,500	$182,547,950
Loan of 1908–1918, 3 per cent	211,740	451,800	35,366,440	48,517,380	49,432,380
Consols of 1930, 2 per cent	186,200	138,000	26,070,800	432,996,700	436,251,700
Loan of 1904, 5 per cent	2,100	77,200	9,058,600	10,687,150	10,731,650
Loan of 1925, 4 per cent	362,150	914,800	46,645,400	98,092,750	103,960,650
Total	836,840	2,969,400	237,483,990	766,901,480	782,924,330

ANALYSIS OF BONDS HELD BY NATIONAL BANKS, AS TO STATES AND NUMBER OF BANKS.

When the refunding act went into operation, it was found that the 2 per cent consols of 1930 were of such particular utility to the national banks of the country that almost the entire loan was lodged with the Treasurer of the United States to secure the circulation issued by the banks, or as security for the deposits lodged with them by the Secretary of the Treasury. While it has at all times been an easy matter to determine the amount of bonds owned by the national banks and used as collateral for circulation and deposits, no attempt has ever been made to classify the banks by States in such manner as to determine the number of national banks in each State holding bonds as above, and the amount of money invested. In view of the fact that the investment in securities of this nature by the banks augurs well for the prosperity of the communities in which the banks exist, and in view of the fact that the present era of prosperity is almost unprecedented, it has been thought that a report on the lines indicated above would be interesting at this time, and a table which follows has been prepared, giving in detail the amount of bonds of the different loans held by the national banks in the various States, Territories, etc., and deposited with the Government as collateral, the number of banks in each State, etc., holding bonds, and the total amount of bonds held in all of the States, Territories, etc. A study of this table will develop a great many curious facts. For instance (I take the 2 per cent consols of 1930 as a basis for the present analysis, as practically all of the bonds in question are of that loan), it is found that the State having the greatest number of banks owning said bonds is Pennsylvania with a total of 531. Next in point of numbers comes New York with 334. While Pennsylvania has 197 more banks than New York as creditors of the Government, the latter has invested in bonds $76,608,750, while the former's amount invested is $50,246,950, or $26,361,800 less. Texas ranks third as to number of banks, but ninth as to amount invested. She has 319 banks, with an investment of $10,293,700. She is ranked by Ohio with $27,608,600, and 283 banks; Massachusetts with $25,413,900, and 234 banks; Missouri with $19,527,650, and 74 banks; Illinois with $18,816,550, and 262 banks (fifth in number of banks); Kentucky with $12,165,900, and 88 banks, and Connecticut with $11,001,900, and 78 banks.

Nevada, the Territory of Alaska, and Porto Rico, the youngest of our possessions, have each one bank holding bonds on deposit with the Government. The State of Nevada has in amount $20,500; Alaska has $87,500, and Porto Rico has $250,000.

New York is the largest investor and Nevada is the smallest.

One of the encouraging signs of the times is found in the manner in which the Territories are coming to the front with banks. Oklahoma has 62 national banks, holding bonds to the amount of $904,750; Indian Territory is second with 60 banks and $883,500 invested, while New Mexico, third, has 13 banks and an investment of $722,550.

The District of Columbia with 11 banks, has an investment of $1,870,000.

The following table shows the relative rank taken by States and Territories, both as to number of national banks and amount invested:

CONSOLS OF 1930 HELD BY NATIONAL BANKS JUNE 30, 1902.

Number.			Amount.		
Rank.	State, etc.	Number of banks.	Rank.	State, etc.	Amount.
1	Pennsylvania	531	1	New York	$76,608,750
2	New York	334	2	Pennsylvania	50,246,950
3	Texas	319	3	Ohio	27,608,600
4	Ohio	283	4	Massachusetts	25,413,900
5	Illinois	262	5	Missouri	19,527,650
6	Massachusetts	234	6	Illinois	18,816,550
7	Iowa	219	7	Kentucky	12,165,900
8	Indiana	137	8	Connecticut	11,001,900
9	Kansas	124	9	Texas	10,293,700
10	New Jersey	123	10	Iowa	10,135,300
11	Nebraska	119	11	Indiana	9,854,500
12	Minnesota	112	12	New Jersey	9,384,800
13	Wisconsin	97	13	Maryland	8,529,750
14	Kentucky	88	14	California	8,350,500
15	Maine	85	15	Virginia	6,556,250
16	Michigan	79	16	Michigan	6,457,750
17	Maryland	78	17	Minnesota	6,257,850
	Connecticut	78	18	Kansas	5,835,150
18	Missouri	74	19	Wisconsin	5,819,250
19	Oklahoma Territory	62	20	Maine	5,147,850
20	Indian Territory	60	21	Colorado	4,832,500
21	Tennessee	58	22	Nebraska	4,817,350
22	Virginia	57	23	New Hampshire	4,764,350
23	New Hampshire	55	24	Vermont	4,141,500
24	West Virginia	50	25	Tennessee	4,129,750
25	California	47	26	Rhode Island	4,049,500
26	Colorado	46	27	Georgia	3,861,750
27	Vermont	45	28	West Virginia	3,532,000
28	North Dakota	44	29	Louisiana	2,522,000
29	Georgia	40	30	North Carolina	2,245,150
30	Alabama	38	31	Washington	2,228,950
	South Dakota	38	32	Alabama	2,167,500
31	North Carolina	35	33	Utah	2,017,500
32	Rhode Island	32	34	District of Columbia	1,870,000
	Washington	32	35	South Carolina	1,790,450
33	Louisiana	26	36	Montana	1,219,750
	Oregon	26	37	Mississippi	1,137,500
34	Montana	21	38	Florida	1,098,750
35	Delaware	20	39	Delaware	905,500
36	Florida	19	40	Oklahoma Territory	904,750
37	South Carolina	17	41	North Dakota	898,750
38	Mississippi	15	42	Indian Territory	883,500
39	Wyoming	14	43	South Dakota	876,300
40	New Mexico Territory	13	44	Oregon	816,550
41	Utah	12	45	New Mexico Territory	722,550
42	Idaho	11	46	Wyoming	530,750
	District of Columbia	11	47	Arkansas	435,000
43	Arkansas	9	48	Idaho	292,900
44	Arizona Territory	7	49	Hawaii Territory	256,500
45	Hawaii Territory	2	50	Porto Rico	250,000
46	Alaska Territory	1	51	Arizona Territory	213,750
	Nevada	1	52	Alaska Territory	87,500
	Porto Rico	1	53	Nevada	20,500
	Total	4,341		Total	394,533,900

The following table gives in succinct form a statement of the number of national banks in the different States, Territories, etc., holding registered bonds, together with the amounts held. In the 2 per cent consols of 1930, 4,341 banks hold $394,533,900, as outlined in the foregoing table. In the 4 per cent funded loan of 1907, 269 banks hold $14,369,250; in the 4 per cent loan of 1925, 88 banks hold $8,826,350; in the 3 per cent loan of 1908 1918, 175 banks hold $9,473,080, and in the 5 per cent loan of 1904, 17 banks hold $943,400, making a total of $428,145,980.

STATES, TERRITORIES, ETC., IN WHICH BONDS ARE HELD BY NATIONAL BANKS, NUMBER OF BANKS, AND AMOUNTS HELD.

State, etc.	Consols of 1930, 2 per cent.		Funded loan of 1907, 4 per cent.		Loan of 1925, 4 per cent.		Loan of 1908–1918, 3 per cent.		Loan of 1904, 5 per cent.		Total amount held by banks—by States.
	No. of banks.	Amount.	No. of banks.	Amount.	No. of banks.	Amount.	No. of banks.	Amount.	No. of banks.	Amount.	
Alabama	38	$2,167,500	3	$150,000			2	$21,600			$2,339,100
Arkansas	9	435,000									435,000
California	47	8,350,500	3	150,000			1	5,000	1	$20,000	8,525,500
Colorado	46	4,832,500	1	12,500			1	12,500			4,857,500
Connecticut	78	11,001,900	6	315,000	2	$130,000	1	80,000			11,556,900
Delaware	20	905,500					1	50,000			955,500
Florida	10	1,098,750	2	37,500							1,136,250
Georgia	49	3,861,750	1	12,500							3,874,250
Idaho	11	292,900	2	25,000	1	22,500	1	25,000			365,400
Illinois	262	18,816,550	8	337,000	2	212,500	7	233,000			19,594,050
Indiana	137	9,854,500	11	987,750	3	100,000	7	330,000	2	133,000	11,405,250
Iowa	219	10,135,300	12	393,500	1	15,000	12	560,700	1	10,000	11,114,500
Kansas	124	5,835,150	1	12,500			6	124,500			5,972,150
Kentucky	88	12,165,200	7	491,400	5	207,500	8	866,200	2	45,000	13,879,000
Louisiana	26	2,522,000	2	37,500							2,559,500
Maine	85	5,147,850	3	150,000	2	85,000	1	40,000			5,422,850
Maryland	78	8,529,750	3	94,500	1	10,000	3	222,500	1	33,000	8,889,750
Massachusetts	234	25,113,900	9	500,000	5	685,000	11	1,577,000	1	100,000	28,273,900
Michigan	79	6,457,750	3	63,600	2	470,000	5	373,060			7,563,810
Minnesota	112	6,257,850	1	32,500	1	100,000	1	7,500			6,397,850
Mississippi	15	1,137,500	2	75,000							1,212,500
Missouri	74	19,527,650	2	125,000	2	62,000	3	132,500			19,847,150
Montana	21	1,219,750	3	45,000							1,264,750
Nebraska	119	4,817,350	1	17,000	1	25,000	6	230,020			5,119,370
Nevada	1	20,500									20,500
New Hampshire	55	4,764,350	3	88,100	3	317,900	3	118,300	1	25,000	5,343,700
New Jersey	123	9,384,800	2	113,000	2	100,000	2	75,000			9,672,800
New York	351	76,608,750	15	4,696,100	15	3,186,000	12	801,400	2	360,000	85,652,250
North Carolina	35	2,245,150	4	112,500			3	140,500			2,498,150
North Dakota	44	898,750									898,750
Ohio	283	27,608,600	31	1,411,150	20	1,997,600	17	843,500	2	41,400	31,902,250
Oregon	26	804,550	1	790,000	1	350,000					1,956,550
Pennsylvania	421	50,246,950	22	1,031,300	9	284,500	23	916,200			52,509,150
Rhode Island	32	1,049,500	1	122,500					1	20,000	1,192,000
South Carolina	17	1,790,450					1	18,000			1,808,450
South Dakota	28	876,300	2	25,500			1	115,000			1,016,800
Tennessee	58	4,129,750	3	112,500			3	262,500	1	82,000	4,586,750
Texas	339	10,293,700	9	130,500			19	477,580			10,901,780
Utah	12	2,017,500									2,017,500
Vermont	45	4,141,500	5	375,000	2	11,000	1	50,000			4,577,500
Virginia	57	6,556,250	5	629,500	1	16,000	2	38,500	1	21,000	7,261,250
Washington	32	2,228,950	3	30,000	1	100,000	2	150,000			2,508,950

West Virginia	50	3,532,000	3	170,000	2	55,800	8	393,200	1	50,000	4,201,000			
Wisconsin	57	5,819,250	1	15,000			1	75,320			5,909,570			
Wyoming	14	580,750									580,750			
Alaska Territory	1	87,500									87,500			
Arizona Territory	7	213,750									213,750			
Hawaii Territory	2	256,500									256,500			
Indian Territory	10	885,500	3	41,250			1	10,000			941,750			
New Mexico Territory	13	722,550									722,550			
Oklahoma Territory	62	901,750			1	155,000	5	110,000			1,166,750			
District of Columbia	11	1,870,000	1	50,000	1	30,000					1,950,000			
Porto Rico	1	250,000									250,000			
Total	1,311	394,593,900	209	14,369,250	88	8,826,350	175	9,473,080	17	942,400	428,145,980			

RECOMMENDATIONS.

I respectfully desire to renew the recommendation of last year, that the assistant register of this office be given an annual salary of $2,500 instead of $2,250, thereby placing the position upon the same plane and dignity, in the matter of compensation, with other offices of like character.

As the custodian of the vault in the division of loans of this office, besides his regular work for which he is paid $1,800 per annum, has the immediate control of the Government securities, amounting to many millions, stored in the vault in his charge, and is obliged to keep an account of the outgoing and incoming of the same, an increase in his pay of $100 is recommended. His compensation will then be less by $100 than that of vault keepers of the Department generally. It is also recommended that the principal bookkeeper be given a like increase. His position requires ability of a high order, with great care and constant vigilance in the discharge of its duties. Should this increase be given, he will still be paid less than is now paid bookkeepers in other branches of the service.

As there has been a large increase in the work of the currency section, as shown elsewhere in this report, which has required from ten to twelve details from other branches of the Department to enable us to carry it on successfully, it is recommended that the office be given nine counters at an annual compensation of $720, and one laborer at the compensation of $660 per annum.

Respectfully submitted.

JUDSON W. LYONS, *Register.*

The SECRETARY OF THE TREASURY.

REPORT OF THE COMMISSIONER OF INTERNAL REVENUE.

TREASURY DEPARTMENT,
OFFICE OF COMMISSIONER OF INTERNAL REVENUE,
Washington, D. C., November 1, 1902.

SIR: I have the honor to submit this report of the operations of the Bureau of Internal Revenue for the fiscal year ended June 30, 1902, together with a statement, as required by law, of the receipts from various sources of internal revenue during the months of July, August, and September of the current year.

By an act of the Congress approved March 2, 1901, and taking effect on the 1st day of July of same year, receipts from internal-revenue taxes were materially decreased. By the act approved April 12, 1902, taking effect July 1 of this year, a further and largely increased reduction of internal-revenue receipts will be produced. By the provisions of these two acts the war-revenue taxes provided for by act of June 13, 1898, have been abolished, reducing in this way internal-revenue taxes about $100,000,000. There has, however, been increase of revenue from taxes laid on distilled spirits and other objects that were not affected by war-revenue legislation.

The receipts of this Bureau for the fiscal year ended June 30, 1901, were $306,871,669.42; for the fiscal year ended June 30, 1902, $271,867,990.25.

By the act of Congress approved May 2, 1902, taking effect July 1, 1902, a change was made in the rate of tax assessed and to be collected

on oleomargarine. Under the act of August 2, 1886, a tax of 2 cents a pound was imposed upon this product. By the amendment of May 9 of this year a tax of 10 cents a pound was assessed, with the proviso that when oleomargarine is free from artificial coloration that causes it to look like butter of any shade of yellow said tax shall be one-fourth of 1 cent per pound. By this same amendment a tax of 10 cents per pound was placed upon adulterated butter and a tax of one-fourth of 1 cent per pound on renovated or process butter.

There has been material reduction of the taxes imposed on fermented liquors, snuff, and tobacco, and while the receipts from these sources through this reduction have been materially decreased the work of the Bureau in connection with these subjects of taxation is unchanged, or increased. The same amount of labor and expense, both in this office and in collection districts, accrues whether the tax on beer is $2 or $1 per barrel and the tax on tobacco 12 or 6 cents a pound.

By an act of Congress of date June 27, 1902, provision was made for the refunding of taxes paid upon legacies and bequests for uses of a religious, charitable, or educational character, for the encouragement of art, etc., under the act of June 13, 1898. This office has already considered and passed refunding claims on this account amounting to some $435,000, and others are now being considered, and it is believed that the total amount that will be refunded under this law will amount to some $640,000.

Under the act of March 2, 1901, provision was made for the payment of a drawback or rebate on all original and unbroken factory packages of smoking and manufactured tobacco and snuff and cigars held by manufacturers or dealers on the 1st of July, 1901, and which rebate should represent the difference between the sum at which these goods had been tax paid and the rate of tax fixed by said act to be effective July 1, 1901. Under this law 49,364 claims have been received and considered by this office, and 49,201 allowed, the amount paid in rebates being $3,108,511.51. The preparation and consideration of these claims in the various collectors' offices throughout the United States and by this office has largely increased the work of the Bureau.

Under the law authorizing the Commissioner to redeem or make allowance for internal-revenue stamps a large number of claims, aggregating 13,533, have been allowed. These include imprinted checks, drafts, and other instruments, and the weight of these instruments presented for redemption has amounted to fully 250 tons.

By reason of the laws above referred to, this office has considered during the past year some 63,000 claims for moneys due to claimants by the Government, and while every effort has been made to expedite consideration of these claims and to make prompt payment of the sums due, yet this creditor class has doubtless to some extent felt that delays have occurred in the consideration and final adjudication of their respective cases.

The various changes in the rates of taxation upon objects upon which internal-revenue taxes are imposed have also caused increased labor in the preparation and distribution of the stamps representing these changed rates.

In addition to the claims for refund or rebate presented, there have been filed during the fiscal year 1902, 4,743 claims for abatement of taxes assessed. These claims require the most careful examination, and their settlement involves the consideration of their legal status, as

well as a careful scrutiny of the amounts presented and testimony submitted. Of the abatement claims pending on the 1st day of July, 1901, and filed during the fiscal year, 3,857 were allowed, amounting to $4,187,681.29, and 440 claims, amounting to $449,284.61, were rejected or returned for amendment.

The following partial comparison of the work done in this Bureau in 1896 and in 1902 is suggestive of the increase within six years: In 1896 there were 1,119,252,498 stamps issued to collectors from this office; in 1902, 1,847,753,740 stamps issued. The number of claims for the redemption of internal-revenue stamps received and examined at this office has increased from 1,111 claims in 1896 to 13,533 claims in 1902. The total production of spirits in 1896, in round numbers, was 89,992,555 gallons; in 1902, 132,843,802. The tax-paid withdrawals of spirits in 1896 were 68,000,000 gallons; in 1902, 104,804,651. Cigars, 4,237,755,943 in 1896, as against 6,864,499,635 in 1902; fermented liquors in 1896, 35,826,098 barrels, as against 44,478,832 barrels in 1902. In 1896, 311 samples of oleomargarine, spirits, etc., were examined in the division of chemistry; in 1902, 805 samples. In 1896, 42,284 letters were sent out by this Bureau, and 41,103 received. In 1902, 96,962 were sent out and 70,740 received.

This partial comparison will be more interesting if we note the increase during the past fiscal year. During the fiscal year ended June 30, 1901, 73,338 letters were sent out. During the fiscal year 1902, 96,962 were mailed. In 1901 the total production of spirits was 128,568,201 gallons; in 1902, 132,843,802 gallons. In 1901, in round numbers, 100,000,000 gallons of tax-paid spirits were withdrawn; in 1902, 104,000,000. The same increase can be shown by an extension of this comparison.

To properly handle this great volume of business, constantly growing and touching so closely the interests of hundreds of thousands of our citizens and coming into nearness of contact with the great and small commercial and financial transactions of the nation, requires a force of efficient, industrious officials, who in number should be kept equal to the requirements of the service and also equal to the proper and legitimate demands of the public for convenience in the transaction of their business with the Government.

The percentage of cost of collection for the fiscal year 1902 is $1.70. This is an increase of 15 cents on each $100 in the percentage of cost of collection as compared with the preceding fiscal year, when the percentage of cost was $1.55 per $100, the lowest percentage of cost reached in the history of this Bureau in the administration of internal-revenue laws. This increased percentage is due largely to increased expenses attending changes in the revenue laws, the cost of handling rebate claims on tobacco, the redemption of stamps provided for by law, and the decrease in total revenue collected following the partial repeal of war-revenue taxes under the act of March 2, 1901.

I estimate that the receipts from all sources of internal revenue for the current fiscal year, 1903, will aggregate $220,000,000.

While the statement of receipts for the months of July, August, and September, 1902, would appear to indicate that the receipts for the year will be largely in excess of the above estimate, there is to be taken into consideration the fact that the production of high-proof spirits, tax-paid within these three months, is regarded by this office as abnormal and not at all likely to be continued through the remaining nine months of the year.

I have therefore felt constrained to fix my estimate as above, believing it to be a conservative one, which will not mislead in any general estimate of the total revenues of the Government.

Following is the statement of collections for the three months ending September 30, 1902:

RECEIPTS FOR FIRST THREE MONTHS, CURRENT FISCAL YEAR.

The following table shows the receipts from the several objects of taxation for the first three months of the fiscal years ending June 30, 1902 and 1903. A comparison of the receipts for the two periods is also given:

Objects of taxation.	Amount of tax paid during first three months of fiscal year—		Increase.	Decrease.
	1902.	1903.		
SPIRITS.				
Spirits distilled from apples, peaches, grapes, pears, pineapples, oranges, apricots, berries, prunes, figs, or cherries	$286,889.08	$321,793.72	$34,904.64	
Spirits distilled from materials other than apples, peaches, grapes, pears, pineapples, oranges, apricots, berries, prunes, figs, or cherries	24,327,104.51	27,925,956.51	3,598,852.00	
Rectifiers (special tax)	139,650.82	142,037.60	2,386.78	
Retail liquor dealers (special tax)	3,070,565.40	3,101,001.07	30,435.67	
Wholesale liquor dealers (special tax)	300,600.65	316,451.73	15,851.08	
Manufacturers of stills (special tax)	437.50	658.36	220.86	
Stills and worms, manufactured (special tax)	700.00	900.00	200.00	
Stamps for distilled spirits intended for export	526.60	534.10	7.50	
Case stamps for distilled spirits, bottled, in bond	2,912.00	4,890.30	1,978.30	
Total	28,129,386.56	31,814,223.39	3,684,836.83	
TOBACCO.				
Cigars weighing more than 3 pounds per thousand	4,466,278.03	5,140,936.96	674,658.93	
Cigars weighing not more than 3 pounds per thousand	102,640.66	102,285.85		$354.81
Cigarettes weighing not more than 3 pounds per thousand, 36 cents per pound	714,214.09	706,163.21		8,050.88
Cigarettes weighing not more than 3 pounds per thousand, 18 cents per pound	62,625.09	77,646.57	15,021.48	
Cigarettes weighing more than 3 pounds per thousand	6,355.08	8,596.08	2,241.00	
Snuff	317,646.02	242,127.95		75,518.07
Tobacco, chewing and smoking	5,953,749.91	4,666,792.52		1,286,957.39
Miscellaneous collections relating to tobacco	[a] 193,643.88	176.90		193,466.98
Total	11,817,152.76	10,944,726.04		872,426.72
FERMENTED LIQUORS.				
Ale, beer, lager beer, porter, and other similar fermented liquors	22,794,384.26	14,098,383.81		8,696,000.45
Brewers (special tax)	100,775.04	94,979.17		5,795.87
Retail dealers in malt liquors (special tax)	163,906.19	171,731.71	7,825.52	
Wholesale dealers in malt liquors (special tax)	249,547.17	260,303.65	10,756.48	
Miscellaneous collections relating to fermented liquors	7,430.04	2,070.14		5,359.90
Total	23,316,042.70	14,627,468.48		8,688,574.22
OLEOMARGARINE.				
Oleomargarine, domestic, artificially colored in imitation of butter	[b] 491,921.82	9,247.92		482,673.90
Oleomargarine free from coloration that causes it to look like butter of any shade of yellow		33,718.71	33,718.71	

[a] Special taxes of dealers in leaf and manufactured tobacco, manufacturers of tobacco and cigars, etc., repealed July 1, 1902.

[b] Oleomargarine; no restriction as to color in the law in force prior to July 1, 1902.

Objects of taxation.	Amount of tax paid during first three months of fiscal year—		Increase.	Decrease.
	1902.	1903.		
OLEOMARGARINE—continued.				
Oleomargarine imported from foreign countries	$910.76	$4.55		$906.21
Manufacturers of oleomargarine (special tax)	11,800.00	11,050.00		750.00
Retail dealers in oleomargarine artificially colored in imitation of butter (special tax)	a 266,563.30	59,741.00		206,822.30
Retail dealers in oleomargarine free from artificial coloration (special tax)		46,990.15	$46,990.15	
Wholesale dealers in oleomargarine, artificially colored in imitation of butter (special tax)	a 56,300.00	20,760.00		35,540.00
Wholesale dealers in oleomargarine free from artificial coloration (special tax)		21,233.34	21,233.34	
Total	827,495.88	202,745.67		624,750.21
ADULTERATED BUTTER AND PROCESS OR RENOVATED BUTTER.				
Adulterated butter manufactured or sold, etc				
Process or renovated butter manufactured or sold, etc		25,949.26	25,949.26	
Manufacturers of process or renovated butter (special tax)		2,462.51	2,462.51	
Manufacturers of adulterated butter (special tax)				
Retail dealers in adulterated butter (special tax)				
Wholesale dealers in adulterated butter (special tax)				
Total		28,411.77	28,411.77	
MISCELLANEOUS.				
Filled cheese	24.00			24.00
Mixed flour	916.13	957.38	41.25	
Playing cards	72,062.36	76,777.56	4,715.20	
Penalties	51,824.43	38,378.49		13,445.94
Collections not otherwise herein provided for	b 8,900,633.09	2,091,381.64		6,809,251.45
Total	9,025,460.01	2,207,495.07		6,817,964.94
Aggregate receipts	73,115,537.91	59,825,070.42		13,290,467.49

a Oleomargarine; no restriction as to color in the law in force prior to July 1, 1902.
b Special taxes, Schedules A and B, excise tax on gross receipts, legacies, etc., repealed July 1, 1902.

COST OF COLLECTION.

The cost of collection for the past fiscal year, distributed among the different items of appropriation, was approximately as follows:

For salaries and expenses of collectors, including pay of deputy collectors, clerks, etc	$1,700,064.92
For salaries and expenses of deputy collectors under act of June 13, 1898	310,235.57
For salaries and expenses of agents under act of June 13, 1898	58,145.54
For salaries of clerks, office of the Commissioner of Internal Revenue, under act of June 13, 1898	104,268.86
For salaries and expenses of revenue agents, gaugers, storekeepers and storekeeper-gaugers, and miscellaneous expenses	2,053,245.19
For paper for internal-revenue stamps	40,884.76
For expenses of detecting and punishing violations of internal-revenue laws	71,472.15
For salaries of officers, clerks, and employees in the office of Commissioner of Internal Revenue	264,306.24
For salaries and expenses under act approved April 22, 1902	1,264.59
Total amount expended	4,603,887.82

ESTIMATED EXPENSES FOR NEXT FISCAL YEAR.

I estimate the expenses of the Internal-Revenue Service for the fiscal year ending June 30, 1904, as follows:

For salaries and expenses of collectors, including pay of deputy collectors and surveyors and clerks, and new districts, including the oleomargarine act approved May 9, 1902, and other expenses	$1,950,000
For salaries of clerks and other employees in office Commissioner of Internal Revenue; salaries and expenses of 20 additional revenue agents, and for other purposes, made necessary by the acts repealing the act of June 13, 1898, rebates, redemption of stamps, and other expenses	250,000
For salaries and expenses of 20 revenue agents, for fees and expenses of gaugers, for salaries of storekeepers, and for miscellaneous expenses	2,000,000
For paper for internal-revenue stamps	65,000
For detecting and bringing to trial and punishment persons guilty of violating the internal-revenue laws, including payment for information and detection	100,000
For salaries, officers, clerks, and employees in the office of Commissioner of Internal Revenue	265,740
Total	4,630,740

In presenting the estimate of the expenses of this Bureau for the next fiscal year (1904), to wit, $4,630,740, every effort has been made to provide for due and proper economy. Though this rule has been observed, it is believed that reduction of cost of collection may be extended to a point where it leads to detriment of the service, to loss of revenue, to public inconvenience, and ill temper.

* * * * * * *

DIVISION OF CHEMISTRY.

The passage of the act of May 9, 1902, has greatly increased the work of this division since the close of the fiscal year.

The new law provides for two classes of oleomargarine and two taxable classes of butter, and large numbers of samples of both products have been submitted for analysis to determine the proper classification.

From July 1, 1902, to November 1, 1902, 478 samples were received, more than three times the number of samples that came in during the same period in 1901.

In consequence, the work of this division is from one to two months in arrears, and it will be necessary to provide for the increased volume of work either by the enlargement of the office laboratory or by the establishment of branch laboratories in other parts of the country, or both.

The repeal of the war-revenue act has brought about little diminution in the quantity of samples submitted, except in the one item of medicinal articles. The provisions of this act in regard to mixed flour were not repealed, and samples are still submitted, although they are few in number, apparently because few violations of the law occur.

No samples of filled cheese were received during the past fiscal year.

CONCLUSION.

In an appendix to the report of the Commissioner of Internal Revenue appear tables giving complete statistics of the work of this Bureau. These tables will be found interesting to students of internal-revenue conditions, and to those engaged in lines of business where the business itself or the products thereof become subject to internal-revenue taxation.

I have the honor to be, respectfully,

JOHN W. YERKES,
Commissioner.

Hon. LESLIE M. SHAW,
Secretary of the Treasury.

REPORT

OF

THE SECRETARY OF WAR.

War Department,
Washington, D. C., December 1, 1902.

To the President:

I have the honor to submit the following report of operations of this Department for the past year:

On November 27, 1901, the date of the last annual report of the Secretary of War, the Army of the United States, according to the latest reports which had been received from the field, consisted of 3,253 officers and 76,084 enlisted men. In addition there were 4,336 men in the hospital corps; 172 volunteer surgeons appointed for duty in the Philippines under the provisions of section 18 of the act of February 2, 1901; 4,973 native scouts under the command of 98 officers in the Philippines, and 25 officers and 815 men of the Porto Rico Provisional Regiment of Infantry.

REDUCTION OF THE ENLISTED STRENGTH OF THE ARMY.

The continued improvement of conditions in the Philippines made possible a further reduction in the enlisted strength of the Army, which, by order dated May 31, 1902, was fixed as follows:

Cavalry		14,040
Artillery:		
Coast	13,734	
Field	3,680	
Noncommissioned staff and bands	328	
		17,742
Infantry		29,880
Engineer battalions and band		1,282
Additional strength for troops stationed at the General Service and Staff College, School of Application, and Legation Guard, Pekin, China		770
Enlisted men, staff departments, etc		2,783
Total Army		66,497

To meet the requirements of the act of June 28, 1902, for the support of the Military Academy, and of the act of June 30, 1902,

making appropriations for the support of the Army, slight modifications of the enlisted strength were made under date of July 1, 1902, making the total enlisted strength of the Army 66,711.

On October 15, 1902, the regular establishment consisted, according to the latest reports which had been received, of 3,586 officers and 66,003 enlisted men, a total of 69,589. In addition, there were 3,598 men of the Hospital Corps, but under the provisions of the act of March 1, 1887, not included as part of the enlisted force of the Army. There were also in the service 182 volunteer medical officers, appointed under section 18 of the act of February 2, 1901, all of whom are under orders for honorable discharge on account of their services being no longer required; 4,978 Philippine scouts, enlisted from the natives, under command of 100 officers, and 29 officers and 840 enlisted men of the Porto Rico Provisional Regiment.

The distribution of the Army October 15, 1902, was as follows:

Country.	Officers.	Enlisted men.	Hospital Corps.	Total.
United States	2,476	44,163	1,868	48,507
Philippine Islands	1,039	19,800	1,594	22,433
Cuba	26	819	39	884
Porto Rico	11	228	37	276
Hawaiian Islands	9	198	15	222
China	2	131	5	138
Alaska	23	664	40	727
Total	3,586	66,003	3,598	73,187

(In addition there were the officers and men of the Porto Rico Provisional Regiment and of the Philippine Scouts and the volunteer surgeons under orders for discharge, as above stated.)

Since the ending of the insurrection and the complete establishment of civil government in the Philippines, it has been possible to make a still further reduction of the Army, and on October 24, 1902, an order was made reducing the enlisted strength to 59,866, the minimum provided by the act of February 2, 1901 (excepting as to the organizations stationed at Fort Leavenworth, Fort Riley, and Pekin), as follows:

Cavalry		12,240
Artillery:		
Coast	13,734	
Field	3,680	
Noncommissioned staff and bands	328	
		17,742
Infantry		24,480
Engineer battalions and band		1,282
Additional strength for troops stationed at the General Service and Staff College, School of Application, and Legation Guard, Pekin, China		1,245
Enlisted men, staff departments, etc		2,877
Total		59,866

The necessary instructions have been given prescribing the method of effecting the reduction required by the order of October 24, 1902, so that it will have been completely accomplished in the most economical way before the end of the current fiscal year, and in the main accomplished during the next thirty days.

The effect of carrying out this order will be to bring the American troops stationed in the Philippines down to an enlisted strength of 13,480.

The distribution will be as follows:

In Philippines	13,480
Coast Artillery in United States, Cuba, and Hawaii	13,298
Field Artillery in United States	3,320
Nine bands and sergeants-major	300
Cavalry in United States (including bands, regimental and squadron noncommissioned staff)	8,540
Infantry in United States (including bands, regimental and battalion noncommissioned staff)	16,645
Infantry in Pekin	150
Infantry in Alaska (excluding 234, who will have to be left there until after navigation opens next summer)	390
Engineers in United States (including band)	866
Staff departments	2,877
Total	59,866

The exception of the organizations stationed at Fort Leavenworth and Fort Riley from the reduction to the minimum strength is made for purposes of instruction, so that at the general service and staff college and the school of application for cavalry and light artillery, student officers may become familiar with the handling of troops at full war strength.

With the execution of this order the Regular Army will have been reduced to the minimum of enlisted strength which, in the judgment of Congress, a wise policy requires us to maintain as insurance against future attack.

The estimates prepared for submission to Congress at the present session call for appropriations on that basis.

The only armed forces which will then remain to be maintained on account of the islands ceded by Spain under the Treaty of Paris will be the Porto Rico Provisional Regiment and the Philippine Scouts.

PORTO RICO REGIMENT.

The act of February 2, 1901, provides that the Porto Rico Regiment shall be continued in service until further directed by Congress. I recommend that the discontinuance of that regiment be now directed, and that at the same time the right of enlistment in the Regular Army be extended to citizens of Porto Rico. There is no longer occasion for maintaining a special and peculiar force in the island, at the expense

of the United States, outside of the coast-defense fortifications. Under the prosperous conditions which have followed the very liberal treatment of the island by the United States, the insular government is well able to support a police force adequate to preserve internal peace and order, and there is no more reason for maintaining a special United States force in addition to the Regular Army to protect Porto Rico against external attack than there is to maintain such a force to protect any part of our territory on the Atlantic coast. The people of Porto Rico should, however, have an opportunity to share in the general defense of the Government to which they owe allegiance and of the institutions which they enjoy.

PHILIPPINE SCOUTS.

The Philippine Scouts should be continued. They enable us to reduce the force of American troops in the Philippines more rapidly than we could without them, and their knowledge of the country, language and the ways of the people, make them especially valuable in hunting down ladrones, which for a good while to come will be an urgent business. The relations between this body of scouts, maintained at the expense of the United States, and the insular constabulary, maintained at the expense of the Philippine government, will have to be worked out hereafter when we have had longer experience of the working of the two forces under peaceful conditions, and know better what revenues can be relied upon by the insular government under like conditions. Both forces are now useful agents in maintaining order. Whether that shall be ultimately accomplished through one force or the other, or both, can hardly as yet be profitably discussed.

VOLUNTEER SURGEONS.

The reduction of the Army has been accompanied by an order for the discharge of all the volunteer surgeons authorized by the act of February 2, 1901, and a large reduction of the Hospital Corps. The prevalence of cholera in the Philippines, however, has made it necessary to retain a number of contract surgeons and Hospital Corps men, with whose services we can dispense ultimately.

ENLISTMENTS.

During the fiscal year ended June 30, 1902, there were 124,542 applications for enlistment in the Army, not including the Hospital Corps and Philippine Scouts. Of these, 37,461, or about 30 per cent, were accepted and 87,081, or about 70 per cent, were rejected. Of the number accepted, 32,243 were natives of the United States, 4,726 were of foreign birth, and 486 were born in Porto Rico; 34,677 were white, 2,284 colored, 14 Indians, and 486 Porto Ricans (color not specified). The reenlistments numbered 11,435 and the new enlist-

ments 26,026. Excluding reenlistments, the percentage of native born among the newly enlisted men was 89.5. Of the applicants rejected, 1,622 were rejected as aliens and 3,828 as illiterates.

MORTALITY AND HEALTH.

The health of the Army has shown a continued improvement. The deaths from all causes during the calendar year 1901 amounted to 13.94 per thousand of mean strength as against 22.74 per thousand of mean strength during the calendar year 1900. This large reduction of death rate was in a great measure due to improved conditions in the Philippines, where the rate was reduced to 17.96 per thousand in the year 1901 as against 29.42 per thousand in the year 1900. The death rate from all causes during the year 1901 in the United States was 6.90 per thousand; in Porto Rico, 7.81; in Cuba, 5.29, and in the Pacific islands and China, 17.96. The rates of admission to sick report for disease and injury and the rate of discharge for disability during the calendar year 1901 agree with the reduced mortality rate in being considerably less than the corresponding rates for the year 1900.

A further improvement of health in the Philippines may be anticipated from the cessation of guerrilla warfare with the exposure incident to it, and from the concentration of the troops remaining in the islands in a smaller number of posts selected and constructed with special reference to sanitary conditions. This work of construction is being pressed forward as rapidly as possible with the appropriations made by Congress at the last session.

Full returns have not been received covering the period of epidemic cholera in the Philippines, but telegraphic reports indicate that the Army has suffered but little.

MILITARY OPERATIONS.

The principal military events of the past year have been the end of the military occupation of Cuba and the end of the insurrection in the Philippines.

CUBA.

In conformity to the Cuban constitution and electoral law, translations of which were annexed to my report of last year, elections were held by the Cuban people on the 31st of December, 1901, and by the electoral college on the 24th of February, 1902, when a president, vice-president, senate and house of representatives were chosen. On the 24th of March, 1902, the following instructions were given to the military governor:

Brigadier-General LEONARD WOOD,

Military Governor of Cuba, Havana, Cuba.

SIR: You are authorized to provide for the inauguration, on the 20th of May next, of the government elected by the people of Cuba; and upon the establishment of said government to leave the government and control of the island of Cuba to its people,

pursuant to the provisions of the act of Congress entitled "An act making appropriation for the Army for the fiscal year ending June 30, 1902," approved March 2, 1901.

Upon the transfer of government and control to the President and Congress so elected, you will advise them that such transfer is upon the express understanding and condition that the new government does thereupon, and by the acceptance thereof, pursuant to the provisions of the appendix to the constitution of Cuba adopted by the constitutional convention on the 12th of June, 1901, assume and undertake all and several the obligations assumed by the United States with respect to Cuba by the treaty between the United States of America and Her Majesty the Queen Regent of Spain, signed at Paris on the 10th day of December, 1898. It is the purpose of the United States Government, forthwith upon the inauguration of the new government of Cuba, to terminate the occupancy of the island by the United States and to withdraw from that island the military forces now in occupancy thereof; but for the preservation and care of the coast defenses of the island, and to avoid leaving the island entirely defenseless against external attack, you may leave in the coast fortifications such small number of artillerymen as may be necessary, for such reasonable time, as may be required to enable the new government to organize and substitute therefor an adequate military force of its own; by which time it is anticipated that the naval stations referred to in the statute and in the appendix to the constitution above cited, will have been agreed upon, and the said artillerymen may be transferred thereto.

You will convene the Congress elected by the people of Cuba in joint session at such reasonable time before the 20th of May as shall be necessary therefor, for the purpose of performing the duties of counting and rectifying the electoral vote for President and Vice-President under the fifty-eighth article of the Cuban constitution. At the same time you will publish and certify to the people of Cuba the instrument adopted as the constitution of Cuba by the constitutional convention on the 21st day of February, 1901, together with the appendix added thereto and forming a part thereof, adopted by the said convention on the 12th day of June, 1901. It is the understanding of the Government of the United States that the government of the island will pass to the new President and Congress of Cuba as a going concern, all the laws promulgated by the government of occupation continuing in force and effect, and all the judicial and subordinate executive and administrative officers continuing in the lawful discharge of their present functions until changed by the constitutional officers of the new government. At the same moment the responsibility of the United States for the collection and expenditure of revenues, and for the proper performance of duty by the officers and employees of the insular government will end, and the responsibility of the new government of Cuba therefor will commence.

In order to avoid any embarrassment to the new president which might arise from his assuming executive responsibility with subordinates whom he does not know, or in whom he has not confidence, and to avoid any occasion for sweeping changes in the civil-service personnel immediately after the inauguration of the new government, approval is given to the course which you have already proposed of consulting the president-elect, and substituting before the 20th of May, wherever he shall so desire, for the persons now holding official positions, such persons as he may designate. This method will make it necessary that the new president and yourself should appoint representatives to count and certify the cash and cash balances, and the securities for deposits, transferred to the new government. The consent of the owner of the securities for deposits to the transfer thereof you will of course obtain.

The vouchers and accounts in the office of the Auditor and elsewhere relating to the receipt and disbursement of moneys during the government of occupation must necessarily remain within the control and available for the use of this

Department. Access to these papers will, however, undoubtedly be important to the officers of the new Government in the conduct of their business subsequent to the 20th of May. You will accordingly appoint an agent to take possession of these papers, and retain them at such place in the island of Cuba as may be agreed upon with the new Government until they can be removed to the United States without detriment to the current business of the new Government.

I desire that you communicate the contents of this letter to Mr. Palma, the President-elect, and ascertain whether the course above described accords with his views and wishes.

Very respectfully,

ELIHU ROOT,
Secretary of War.

These instructions, being communicated to the President-elect, Mr. Palma, received his approval, and they were completely executed on the 20th of May, 1902. The specific instructions which followed and the various public acts, which, taken together, accomplished the termination of military government and the inauguration of the new Republic, are shown in the series of papers annexed hereto as "Appendix A."

The whole governmental situation in Cuba was quite unprecedented, with its curious device of a suspended sovereignty given up by Spain, but not in terms vested in anybody else, and if vested remaining dormant, while a practical working government of military occupation in time of peace, deriving its authority from the sovereignty of another country, claimed temporary allegiance, made and enforced laws, and developed a political organization of the Cuban people to take and exercise the suspended or dormant sovereignty. It was important that in inaugurating the new government there should be no break in the continuity of legal obligation, of rights of property and contract, of jurisdiction, or of administrative action. It would not do to wait for the new government to pass laws or to create offices and appoint administrative officers and vest them with powers, for the instant that the new government was created the intervening government ceased, and the period of waiting would be a period of anarchy.

It was necessary, therefore, to take such steps that the new government should be created as a going concern, every officer of which should be able to go on with his part of the business of governing under the new sovereignty without waiting for any new authority. That everything necessary to this end should be done, and that it should be done according to a consistent and maintainable legal theory, caused the Department a good deal of solicitude. It is gratifying to report that it was done, and that the government which, until noon of May 20th, was proceeding under the authority of the President of the United States, went on in the afternoon of that day and has ever since continued under the sovereignty which had been abandoned by Spain in April, 1899, without any more break or

confusion than accompanies the inauguration of a new President in the United States. This could not have been done without the most perfect good understanding, mutual confidence, and sympathetic cooperation on the part of our officers, who were about to retire, and the newly-elected officers of Cuba, who were about to take the reins of government. Our troops withdrew from Cuba in the afternoon of the 20th of May, amid universal expressions of gratitude, esteem, and affection. The public feeling was well illustrated by the following telegram from President Palma:

HAVANA, *May 21, 1902.*

ELIHU ROOT,

Secretary of War, Washington:

I am deeply moved by your heartfelt message of congratulation on the inauguration of the Republic of Cuba, to the birth of which the people and the Government of the United States have contributed with their blood and treasure. Rest assured that the Cuban people can never forget the debt of gratitude they owe to the great Republic, with which we will always cultivate the closest relations of friendship and for the prosperity of which we pray to the Almighty.

T. ESTRADA PALMA.

I venture to express the hope that this strong and well-deserved friendship of Cuba may be permanent and may never be alienated by our treatment of the smaller and weaker power, and that the people of the United States may never lose their deep interest in the welfare of the new Republic which they have called into being with so much labor and sacrifice. I know of no chapter in American history more satisfactory than that which will record the conduct of the military government of Cuba. The credit for it is due, first of all, to Brig. Gen. Leonard Wood, the commander of the department of Santiago until December, 1899, and thenceforth military governor of the island. Credit is due also to Brig. Gen. Tasker H. Bliss, who had charge of the collection of customs revenues; Maj. E. St. John Greble and Maj. and Surg. Jefferson R. Kean, successively heads of the department of charities; Lieut. Matthew E. Hanna, superintendent of public schools; Lieut. E. C. Brooks and Mr. J. D. Terrill, successively auditors of Cuba; and to the Cuban gentlemen who, as heads of the various state departments, constituted the cabinet of the military governor: Messrs. Diego Tamayo, secretary of state and government; Leopoldo Cancio, secretary of finance; Jose Varela, secretary of justice; Jose R. Villalon, secretary of public works; Enrique Jose Varona, secretary of public instruction; and Perfecto Lacoste, secretary of agriculture. Credit is also due to Maj. Gen. John R. Brooke, the first military governor, and the members of his administration; and to the department commanders, Gen. James H. Wilson and Gen. Fitzhugh Lee; to the lamented Gen. William Ludlow, whose arduous labors in the government and sanitation of Havana made his untimely death not the least of his country's sacrifices for

Cuba; to Brig. Gen. Joseph P. Sanger, commander at Matanzas and later director of the census; and to Maj. Gen. (then Col.) Adna R. Chaffee, chief of staff, and Col. W. V. Richards and Col. H. L. Scott, adjutants-general of the department.

Especial credit is due also to the Medical Department of the Army, and particularly to Maj. Walter Reed and Maj. William C. Gorgas for their extraordinary service in ridding the island of yellow fever, described in my last report; and to Dr. Jefferson R. Kean and Dr. James Carroll for their share in that work.

The brilliant character of this scientific achievement, its inestimable value to mankind, the saving of thousands of lives, and the deliverance of the Atlantic seacoast from constant apprehension, demand special recognition from the Government of the United States.

Dr. Reed is the ranking major in the Medical Department, and within a few months will, by operation of law, become lieutenant-colonel. I ask that the President be authorized to appoint him assistant surgeon-general with the rank of colonel, and to appoint Major Gorgas deputy surgeon-general with the rank of lieutenant-colonel, and that the respective numbers in those grades in the Medical Department be increased accordingly during the period for which they hold those offices.

The name of Dr. Jesse W. Lazear, contract surgeon, who voluntarily permitted himself to be inoculated with the yellow fever germ, in order to furnish a necessary experimental test in the course of the investigation, and who died of the disease, should be written in the list of the martyrs who have died in the cause of humanity. As a slight memorial of his heroism a battery in the coast defense fortification at Fort Howard, Baltimore, Md., has been named "Battery Lazear."

Under the clause of the foregoing instructions relating to the care of the coast defenses in Cuba, four companies of Coast Artillery have been left in the fortifications of Habana, two companies at Cienfuegos, and two companies at Santiago, pending the location of naval stations, to which they may be transferred, and the instruction of Cuban artillerists to take their place. The Cuban artillery force has been organized and is receiving regular instruction from our artillery officers.

I append hereto, marked "Appendix B," a statement showing the amount and sources of all revenue collected in Cuba between the surrender of Santiago on July 14, 1898, and the end of the military government on the 20th of May, 1902, and showing the disposition of the funds so collected. A complete and detailed statement of the audited accounts by items covering the entire sum has been prepared and will be transmitted to Congress at the opening of the session.

THE PHILIPPINES.

At the time of my last report Malvar, in the provinces of Batangas and Tayabas, in the island of Luzon, and Lukban, in the island of Samar, were the only insurgent leaders of importance who still maintained guerrilla warfare. We hoped that these leaders with their followers would yield to the example and advice of the great body of the Philippine people who had become friendly to the United States, and would voluntarily lay down their arms. It soon became evident, however, that this would not be the case. Malvar grew stronger, rather than weaker, under the effect of a conciliatory and peaceful policy, and the fierce natives of Samar were excited to greater hostile activity by a successful surprise at Balangiga in September, by which the people of the town, who had given every appearance of friendliness and were treated as friends, set upon a company of the Ninth Infantry while at breakfast and murdered most of them.

Active campaigns were accordingly inaugurated in both regions; and these resulted in the surrender of Malvar on the 16th of April, and in the capture of Lukban and the surrender of Guevara, his successor, on the 27th of April. Gen. Frederick D. Grant reports that the surrenders in Samar included every gun known to exist in the island, except two; and Gen. J. F. Bell, who conducted operations against Malvar, in Batangas, reports that during the campaign we secured 3,561 guns, 625 revolvers, with many thousand bolos, rounds of ammunition, etc., and detected, captured, or forced to surrender some eight or ten thousand persons actively engaged in one capacity or another in the insurrection. These surrenders put an end to the guerrilla warfare in the Philippines, which had been waged with great ferocity ever since the destruction of Aguinaldo's government in the latter part of 1899, and had been accompanied by constant treachery, assassination, cruelty, and disregard of the laws of war.

The way was now clear to complete the establishment of civil government, and by energetic action and hearty cooperation on the part of both the civil and military authorities in the Philippines this was accomplished coincidently with the enactment by Congress of the Philippine government bill of July 1, 1902.

On the 4th of July, 1902, the remainder of the military government was ended by the following order:

WAR DEPARTMENT, *Washington, July 4, 1902.*

The insurrection against the sovereign authority of the United States in the Philippine Archipelago having ended, and provincial civil governments having been established throughout the entire territory of the archipelago not inhabited by Moro tribes, under the instructions of the President to the Philippine Commission, dated April 7, 1900, now ratified and confirmed by the act of Congress approved July 1, 1902, entitled "An act temporarily to provide for the administration of affairs of civil

government in the Philippine Islands, and for other purposes," the general commanding the Division of the Philippines is hereby relieved from the further performance of the duties of military governor, and the office of military governor in said archipelago is terminated. The general commanding the Division of the Philippines, and all military officers in authority therein, will continue to observe the direction contained in the aforesaid instructions of the President, that the military forces in the Division of the Philippines shall be at all times subject, under the orders of the military commander, to the call of the civil authorities for the maintenance of law and order and the enforcement of their authority.

By the President:

ELIHU ROOT, *Secretary of War.*

On the same day the President issued a proclamation of peace and amnesty, a copy of which is annexed as "Appendix C."

The dual process by which the military power had steadily acquired control over the various provinces of the archipelago, and at the same time had been superseded progressively by civil administration, was then finished, and a complete system of civil government, built up under the authority of the President, was in operation, ready to go on under the authority of Congress.

I described in my last report the important bearing which the continuous offer and bestowal of civil rights and local self-government as the result of pacification had upon the attitude of the people toward the insurrection. It is evident that the insurrection has been brought to an end both by making a war distressing and hopeless on the one hand, and by making peace attractive, through immediate and present demonstration of the sincerity of our purpose to give to the people just and free government, on the other. This result could not have been accomplished except by genuine and hearty cooperation of both the military and civil authorities acting together under the general direction of the War Department. The good temper and mutual consideration and helpfulness, and subordination of personal to public interests, displayed by General MacArthur and General Chaffee on the one hand, and by Governor Taft, Vice-Governor Wright, and the Civil Commission on the other, frequently under circumstances of great delicacy and difficulty, are worthy of high praise. Some of their subordinates, through incomplete knowledge and from widely differing points of view, have sometimes expressed discordant opinions, but both soldiers and civilians, with very few exceptions, have rendered loyal and devoted support to the prescribed policy.

There was at one time in the public press and on the floor of Congress much criticism of the conduct of the Army in the Philippines, as being cruel and inhuman. All wars are cruel. This conflict consisted chiefly of guerrilla warfare. It lasted for some three years and a half, and extended over thousands of miles of territory. Over 120,000 men were engaged upon our side, and much greater numbers upon the other, and we were fighting against enemies who

totally disregarded the laws of civilized warfare, and who were guilty of the most atrocious treachery and inhuman cruelty. It was impossible that some individuals should not be found upon our side who were unnecessarily and unjustifiably cruel. Such instances, however, after five months of searching investigation by a committee of the Senate, who took some three thousand printed pages of testimony, appear to have been comparatively few, and they were in violation of strict orders obedience to which characterized the conduct of the Army as a whole.

The two observers who, as the heads of the civil government in the Philippines, had the best opportunities for information, and at the same time were naturally free from any military bias, have given what I believe to be a true statement of the character of our military operations.

Vice-Governor Luke E. Wright says, in a letter written on the 20th of July last:

> General Chaffee, as a matter of course, had no patience with any acts of oppression or cruelty, and whenever his attention has been called to them has at once taken proper steps. The howl against the Army has been made mainly for political purposes, and the cruelties practiced have been largely exaggerated. Of course, numerous instances of this character have occurred. There never was and never will be a war of which the same may not be said, but taken as a whole, and when the character of the warfare here is considered, I think the officers and men of the American Army have been forbearing and humane in their dealings with the natives, and the attempt to create a contrary impression is not only unjust to them, but it seems to me unpatriotic as well.

Governor Taft, in his testimony under oath before the Philippine Committee of the Senate on the 4th of February last, said:

> After a good deal of study about the matter, and, although I have never been prejudiced in favor of the military branch, for when the civil and military branches are exercising concurrent jurisdiction there is some inevitable friction, I desire to say that it is my deliberate judgment that there never was a war conducted, whether against inferior races or not, in which there was more compassion and more restraint and more generosity, assuming that there was war at all, than there have been in the Philippine Islands.

SUMMARY OF SERVICE IN CUBA AND THE PHILIPPINES.

The conduct and service of the Army, both in Cuba and in the Philippines, were summed up in the following order:

> WAR DEPARTMENT, *Washington, July 4, 1902.*
>
> *To the Army of the United States:*
>
> The President upon this anniversary of national independence wishes to express to the officers and enlisted men of the United States Army his deep appreciation of the service they have rendered to the country in the great and difficult undertakings which they have brought to a successful conclusion during the past year.
>
> He thanks the officers and the enlisted men who have been maintaining order and carrying on the military government in Cuba, because they have faithfully given effect to the humane purposes of the American people. They have with sincere kindness helped the Cuban people to take all the successive steps necessary to the

establishment of their own constitutional government. During the time required for that process they have governed Cuba wisely, regarding justice and respecting individual liberty; have honestly collected and expended for the best interests of the Cuban people the revenues, amounting to over $60,000,000; have carried out practical and thorough sanitary measures, greatly improving the health and lowering the death rate of the island. By patient, scientific research they have ascertained the causes of yellow fever, and by good administration have put an end to that most dreadful disease, which has long destroyed the lives and hindered the commercial prosperity of the Cubans. They have expedited justice and secured protection for the rights of the innocent, while they have cleansed the prisons and established sound discipline and healthful conditions for the punishment of the guilty. They have reestablished and renovated and put upon a substantial basis adequate hospitals and asylums for the care of the unfortunate. They have established a general system of free common schools throughout the island, in which over 200,000 children are in actual attendance. They have constructed great and necessary public works. They have gradually trained the Cubans themselves in all branches of administration, so that the new government upon assuming power has begun its work with an experienced force of Cuban civil service employees competent to execute its orders. They have borne themselves with dignity and self-control, so that nearly four years of military occupation have passed unmarred by injury or insult to man or woman. They have transferred the government of Cuba to the Cuban people amid universal expressions of friendship and good will, and have left a record of ordered justice and liberty, of rapid improvement in material and moral conditions, and progress in the art of government which reflects great credit upon the people of the United States.

The President thanks the officers and enlisted men of the army in the Philippines both regulars and volunteers, for the courage and fortitude, the indomitable spirit and loyal devotion with which they have put down and ended the great insurrection which has raged throughout the archipelago against the lawful sovereignty and just authority of the United States. The task was peculiarly difficult and trying. They were required at first to overcome organized resistance of superior numbers, well equipped with modern arms of precision, intrenched in an unknown country of mountain defiles, jungles, and swamps, apparently capable of interminable defense. When this resistance had been overcome they were required to crush out a general system of guerrilla warfare conducted among a people speaking unknown tongues, from whom it was almost impossible to obtain the information necessary for successful pursuit or to guard against surprise and ambush.

The enemies by whom they were surrounded were regardless of all obligations of good faith and of all the limitations which humanity has imposed upon civilized warfare. Bound themselves by the laws of war, our soldiers were called upon to meet every device of unscrupulous treachery and to contemplate without reprisal the infliction of barbarous cruelties upon their comrades and friendly natives. They were instructed, while punishing armed resistance, to conciliate the friendship of the peaceful, yet had to do with a population among whom it was impossible to distinguish friend from foe, and who in countless instances used a false appearance of friendship for ambush and assassination. They were obliged to deal with problems of communication and transportation in a country without roads and frequently made impassable by torrential rains. They were weakened by tropical heat and tropical disease. Widely scattered over a great archipelago, extending a thousand miles from north to south, the gravest responsibilities, involving the life or death of their commands, frequently devolved upon young and inexperienced officers beyond the reach of specific orders or advice.

Under all these adverse circumstances the Army of the Philippines has accomplished its task rapidly and completely. In more than two thousand combats, great and small, within three years, it has exhibited unvarying courage and resolution.

Utilizing the lessons of the Indian wars, it has relentlessly followed the guerrilla bands to their fastnesses in mountain and jungle and crushed them. It has put an end to the vast system of intimidation and secret assassination by which the peaceful natives were prevented from taking a genuine part in government under American authority. It has captured or forced to surrender substantially all the leaders of the insurrection. It has submitted to no discouragement and halted at no obstacle. Its officers have shown high qualities of command, and its men have shown devotion and discipline. Its splendid virile energy has been accompanied by self-control, patience, and magnanimity. With surprisingly few individual exceptions, its course has been characterized by humanity and kindness to the prisoner and the noncombatant. With admirable good temper, sympathy, and loyalty to American ideals its commanding generals have joined with the civilian agents of the Government in healing the wounds of war and assuring to the people of the Philippines the blessings of peace and prosperity. Individual liberty, protection of personal rights, civil order, public instruction, and religious freedom have followed its footsteps. It has added honor to the flag which it defended, and has justified increased confidence in the future of the American people, whose soldiers do not shrink from labor or death, yet love liberty and peace.

The President feels that he expresses the sentiments of all the loyal people of the United States in doing honor to the whole Army which has joined in the performance and shares in the credit of these honorable services.

This General Order will be read aloud at parade in every military post on the 4th day of July, 1902, or on the first day after it shall have been received.

ELIHU ROOT,
Secretary of War.

THE CONTROL OF THE MOROS.

The establishment of civil government in the Philippines still left a function for the Army to perform in the control of the Moros in the Sulu Archipelago, Southern Mindanao, and the southern part of Palawan very similar to that which it has long performed in relation to the Indian tribes in the Western part of the United States. It was only through an extended series of decisions by the Supreme Court of the United States, dealing with specific questions as they arose in the early years of the last century, that the precise legal relations between the Federal Government, the State and Territorial governments, and the Indian tribes of North America were determined.

The court said in the case of The Cherokee Nation *v.* The State of Georgia (5 Peters, 1):

> The Indians are acknowledged to have an unquestionable and heretofore an unquestioned right to the lands they occupy until that right shall be extinguished by a voluntary cession to the Government. It may well be doubted whether those tribes which reside within the acknowledged boundaries of the United States can with strict accuracy be denominated foreign nations. They may more correctly, perhaps, be denominated domestic dependent nations. They occupy territory to which we assert a title, independent of their will, which must take effect in point of possession when their right of possession ceases; meanwhile they are in a state of pupilage. Their relations to the United States resemble that of a ward to his guardian. They look to our Government for protection; rely upon its kindness and its power; appeal to it for relief to their wants and address the President as their great father.

A similar process of judicial decision will probably be called for by the numerous questions certain to arise from our relations to the Moro tribes; but in the meantime the close general analogy to the relations of the North American Indians indicates a duty, for the present at least, of limited supervision and control operating upon the tribal governments of the Moros, rather than an attempt to substitute an American or Philippine government acting directly upon the individual Moros. In the performance of this duty we find ourselves exercising powers and following methods plainly contemplated by the Constitution, and sanctioned by the judicial decisions and established usage of the entire existence of the Government of the United States.

The instructions of the President to the Philippine Commission of April 7, 1900, contained the following direction based upon the foregoing view:

> In dealing with the uncivilized tribes of the islands the Commission should adopt the same course followed by Congress in permitting the tribes of our North American Indians to maintain their tribal organization and government, and under which many of those tribes are now living in peace and contentment, surrounded by a civilization to which they are unable or unwilling to conform. Such tribal governments should, however, be subjected to wise and firm regulation, and without undue or petty interference constant and active effort should be exercised to prevent barbarous practices and introduce civilized customs.

The same instructions provide that the military forces in the Philippines shall be at all times subject, under the orders of the military commander, to the call of the civil authorities for the maintenance of law and order and the enforcement of their authority.

These instructions were approved and adopted by Congress in the Philippine government act of July 1, 1902, and they will continue to guide the civil and military authorities in the Philippines in their dealings with the Moros. The questions to be worked out in that process are altogether apart from the general questions of government in the Philippines, and such measures of force as are necessary to control the various Moro tribes have no more relation to the recent Philippine insurrection than our troubles with the Sioux or the Apaches had to do with the suppression of the Southern rebellion.

The Moros of the Sulu Archipelago and Palawan, and those living upon, or in immediate communication with, the seacoast in Mindanao, have been as a rule friendly and well behaved. Some of the Malanao Moros who inhabit the borders of Lake Lanao, in the interior of Mindanao, resented attempts made by Americans to examine the interior of the country, and in the spring of this year entered upon a regular system of attacking our men when found alone or in small parties, and stealing our horses and mules. Several of our men were murdered, and in April a demand was made for the return of the property and the surrender of the murderers. This demand was met by defiance, and after long continued and repeated efforts to secure redress and a

discontinuance of the practice by peaceable means, an expedition was organized under Col. (now Brig. Gen.) Frank D. Baldwin, which on the 2d and 3d of May attacked and captured the strongholds of the Sultan of Bayang and the dato of Binadayan on Lake Lanao, with a loss of 7 killed and 44 wounded. A part of the Twenty-seventh Infantry and the Twenty-fifth Mountain Battery were engaged. It was a brilliant affair, and the conduct of officers and men merited the high praise conveyed in the following dispatch from the President:

WASHINGTON, D. C., *May 5, 1902.*

CHAFFEE, *Manila:*

Accept for the army under your command, and express to General Davis and Colonel Baldwin especially, my congratulations and thanks for the splendid courage and fidelity which have again carried our flag to victory. Your fellow-countrymen at home will ever reverence the memory of the fallen, and be faithful to the survivors who have themselves been faithful unto death for their country's sake.

THEODORE ROOSEVELT.

After this lesson many of the lake dattos came in and established friendly relations. Some of them, however, remained recalcitrant, and continued the practice of annoyance and attack. General Chaffee reported on the 6th of September that since the 2d of May our troops had been attacked twelve times, with a loss of 4 killed and 12 wounded. On the 28th of September another well-conducted expedition under Capt. John J. Pershing, of the Fifteenth Cavalry, composed of a battalion of the Seventh Infantry, a troop of the Fifteenth Cavalry, and two platoons of the Twenty-fifth Field Artillery, inflicted severe punishment upon the Maciu Moros, capturing many of their fortified places, killing 1 of their sultans and 40 or 50 of their fighting men, with a loss of 2 Americans wounded.

Some further punishment may yet be necessary, but the present indications since this last experience seem to be peaceful.

The numbers of the Lake Lanao Moros are estimated variously from 100,000 to 400,000. The smaller number is probably nearer the fact. No attempts appear to have been made by Spain to exercise any control over them between the middle of the seventeenth century and the year 1890. Some unsuccessful efforts were made by small forces in the years 1890 and 1891; and in 1898, before the war between Spain and the United States, extensive preparations had been made by the Spanish forces in the Philippines for the subjugation of the lake tribes.

Farther in the interior of Midanao are numerous heathen tribes still more savage and lower in the scale of civilization than the Moros. In 1897 the Spanish governor of Mindanao estimated the numbers of sixteen of these tribes at an aggregate of 262,000. From time immemorial the Moros have been in the habit of raiding their villages and carrying away captives into slavery, and a considerable slave trade appears to have been carried on between the southwest coast of Mindanao and ports in the Sulu Archipelago. It is only by asserting and

establishing our right of control over the Moro tribes that we can put a stop to this nefarious business; and if there were no other reason, that alone would make it impossible for us to follow the example of Spain and leave the Moros of the interior to themselves.

Now that the insurrection has been disposed of we shall be able to turn our attention, not merely to the slave trade, but to the already existing slavery among the Moros. We can not immediately free the slaves by a single act, first, because it would require a war of extermination in which a large part of the slaves would probably be found fighting against us; and, second, because a large part of them would have nowhere to go and no way to live if deprived of the protection and support of their present masters. I believe, however, that we can maintain a process of gradual and steady reduction, resulting ultimately in the extinction of the practice of slavery. Some of the results of our efforts in that direction are stated in my last report. The process will be slow, and will require patience and good judgment, but I believe the result will be worth the trouble. The task of improving the Moros is by no means hopeless. Gen. George W. Davis, who commanded in Mindanao, and now commands the Division of the Philippines, says of them:

> Whatever may be the number of Moros, whether a few, or many hundred thousands, all, and many times more than all, of these people will be needed as agricultural and mechanical laborers and helpers in the cultivation of the soil and the utilization of its productions for the benefit of themselves and mankind. They are able to produce rice, sugar cane, coffee, corn, cattle, beautiful woven fabrics, and thrusting and cutting weapons; they manufacture bronze cannon and gunpowder, and give surprising proofs of their ingenuity and industry. Their Moro boats are fashioned and rigged and sailed with the utmost skill, and are admired by all strangers. A race of men who are capable of doing all this and who possess many manly qualities, should be kept alive and not shot down in war. They should be aided and encouraged and taught how to improve their own natural and social condition, and benefit us at the same time. Mohammedans in Turkey and India and Java have proved to be industrious and useful members of the communities. Mohammedan Malays in Sarawak, a British Protectorate in Borneo, perform all the skilled and unskilled labor of that prosperous colony, and are as plainly showing their adaptability for the higher duties and occupations as did the Japanese. The Moros have certainly equal or greater capacity for usefulness.

The report from which this quotation is taken is among those transmitted herewith, and I commend it to special attention. It exhibits the breadth of view and sound judgment which uniformly characterize that officer's work.

THE DISPOSITION TO BE MADE OF THE ARMY IN PEACE.

The restoration of the normal conditions of peace, and the return of the greater part of the Army to the United States, have made it possible to resume with increased activity the work of preparing for future wars.

The increase of the Army from 25,000 to a minimum of 60,000 has, of course, made necessary a great increase in barracks, quarters, hospitals, and all the constructions which go to make up an Army post. The accommodations which had been provided before the war with Spain are now quite inadequate, and require to be more than doubled. The work of construction has been pressed vigorously by the Quartermaster's Department to the extent allowed by the appropriations made by Congress for this purpose.

The policy followed has been rather to increase the size of the posts in which the Army is to be quartered than to increase the number. Two considerations have determined that policy: First, economy of administration, and second, and most important, efficiency of officers and men. The tendency of life in small one or two company posts is narrowing and dwarfing, and such posts can be justified only by necessity. On the other hand, the comparison and emulation between officers and organizations grouped in a large post, the advantages of systematic study and practice in the schools which can be maintained at such posts, the advantage of being under the immediate direction and influence of officers of high rank who can not be scattered among the small posts, but can be collected in the large ones; the practical benefit derived from handling considerable bodies of troops so that company officers may be learning to handle regiments, and regimental officers to handle brigades, and so on—all these considerations, point to the large post as furnishing the conditions of increasing efficiency on the part of both officers and men.

The only argument which has been made against this view is that the scattering of the Army in a great number of small posts would popularize it, and that there ought to be an equitable distribution of the troops among all the different States. I think these propositions may be dismissed with the confident assertion that the Army will be popular and satisfactory to all the States in proportion as it is efficient and economical.

Another line of policy followed by the Department is, so far as practicable, to get the Army posts out of the cities and large towns, and establish them upon larger tracts of cheaper land in the neighborhood of the same cities and towns, so that the men may have the benefit of country air instead of city air, and more room for training and exercise; the neighborhood of the barracks may be under military control; the rum shops and brothels may be pushed farther away from the men; and at the same time the advantages of convenient inspection, transportation and supply, and a reasonable degree of educational and and social privileges, may be retained.

In order to secure a definite plan for the distribution of troops and the construction work necessary to provide for their maintenance, a board was convened in Washington in November last, composed of all

the general officers of the Army in the United States, under the following directions:

By direction of the Secretary of War, a board of officers is hereby appointed to meet in Washington, D. C., on the 25th day of November, 1901, to consider and report upon the location and distribution of the military posts required for the proper accommodation, instruction, and training of the Army as organized under the act of February 2, 1901, not including coast fortifications. The board will make recommendations in detail as to which of the existing posts should be retained or abandoned, and of those retained which, if any, should be enlarged and to what extent, and the location, size, and character of such new posts as may be necessary, having due regard in all its recommendations to the proper distribution of the different arms of the service based upon strategic, sanitary, and economical considerations.

The board will also formulate and submit a project for the location, examinations and surveys to be made for the permanent camp grounds provided for by section 35 of the act of February 2, 1901.

This board performed its duties during the months of November, December, January, and February, and its report and recommendations were transmitted to Congress on the 19th of May, and are printed as House Doc. No. 618, Fifty-seventh Congress, first session.

Much delay and difficulty in providing barracks and quarters for the coast-defense artillery has arisen from the policy followed in making appropriations during the earlier years of work upon our coast defenses. With what we can now see to have been unwise economy, the appropriations were in a great number of cases so limited as to permit the purchase of only enough land for the fortifications themselves, leaving the land necessary for barracks, quarters, hospitals, storehouses, and administrative purposes to be acquired in the future. As a natural result, as soon as the Government was committed to an extensive fortification the prices of all the additional land which it needed in the neighborhood were put up immensely, and in order to provide for troops to man the fortifications, the Government has been obliged, after long negotiations, to pay many times as much as the land could have been bought for originally, or to take condemnation proceedings with usually the same result.

To prevent a continuance of this practice an order was made on April 9, 1901, requiring all papers presented to the Secretary of War for approval of the purchase of land connected with the seacoast fortifications, to be accompanied by a certificate of the Chief of Artillery, that the proposal presented included all the land which would be required for all purposes of the defense at that point. It is to be hoped that future appropriations for such purposes will be so arranged as to permit a continuance of this policy.

SEACOAST DEFENSES.

Additional guns have been mounted in the coast-defense fortifications during the year as follows: Eight 12-inch, three 8-inch, twenty

rapid-fire, thirty-four 12-inch mortars, making a total now mounted of eighty 12-inch, one hundred and twelve 10-inch, eighty-nine 8-inch, one hundred and eight rapid-fire guns, and two hundred and ninety-seven mortars.

There have also been completed and issued, ready to mount, additional guns, as follows: Two 12-inch, three 10-inch, seventy-four rapid-fire, and fifteen mortars, making a total now mounted or ready to mount of eighty-two 12-inch, one hundred and fifteen 10-inch, eighty-nine 8-inch, one hundred and eighty-two rapid-fire, and three hundred and twelve mortars.

The status of emplacements for which funds have been provided by Congress was as follows at the close of the fiscal year 1902:

	12-inch.	10-inch.	8-inch.	Rapid-fire.	12-inch mortars.
Guns mounted	80	112	[a] 89	[b] 108	297
Ready for armament	16	3	5	[c] 229	55
Under construction	9	15	2	146	24
Total	105	130	96	483	376

[a] Nineteen of these, which had been mounted temporarily, have since been dismounted.
[b] One temporarily.
[c] Including seventy 6-pounders not requiring permanent emplacements.

In compliance with the direction of the fortifications act of June 6, 1902, a board was constituted in July last, composed of one engineer officer, one ordnance officer, three artillery officers, one naval officer, and one civilian mechanical engineer of high standing, to make a thorough test of disappearing gun carriages. Such tests were made by the board in accordance with the statute. The report of the board was unanimous in favor of the disappearing carriage, and the Board of Ordnance and Fortification has concurred in that approval. This is the third competent board which has tested and approved the disappearing carriage, and the third time that the Board of Ordnance and Fortification, with widely differing membership on each occasion, has approved it as a type.

When the general plan of coast-defense fortification was adopted by the Endicott board in 1886, the only means then invented for protecting the high-power coast-defense gun and its crew was the steel or chilled cast-iron turret, which would have cost between $1,000,000 and $1,100,000 for each pair of 12-inch guns mounted. The first attempt to escape from this enormous expense by a mechanical device which would protect the gun and gunners during the period of loading and expose the gun only at the time of firing was the gun lift, upon which we now have two 12-inch guns mounted at Sandy Hook. It cost about $525,000, exclusive of the guns, and each of the guns mounted upon it can be fired once in eight minutes and a half.

Within a few rods of this gun lift at Sandy Hook we have two 12-inch guns mounted on modern disappearing carriages, at a cost of $150,000 for the carriages, emplacements and protection of both guns, and each of these guns can be fired ten times in eight minutes and a half.

Satisfactory progress has been made in the installation of searchlights, in developing systems of fire control and direction, and in the application of electricity to the handling of heavy guns and projectiles and ammunition.

The nitrocellulose smokeless powder developed by the Ordnance Department continues to prove satisfactory. Four private firms are engaged in its manufacture, and a considerable reserve has been accumulated.

The test of the Gathmann torpedo gun under the requirement of the fortifications act of March 1, 1901, resulted in an unfavorable report, in which the Board of Ordnance and Fortification has concurred. The statute required the Gathmann gun to be fired in competition with an army 12-inch service rifle, and the firing of the latter weapon exhibited extraordinary progress made by the Ordnance Department toward the perfection of high explosives for the bursting charge of armor-piercing shells, and in the development of fuses for such shells. The ordnance shells from the 12-inch service rifle passed entirely through a 12-inch harveyized steel plate and exploded on the farther side of the plate. The ability thus demonstrated to send a shell through a ship's armor 12 inches in thickness and detonate the shell within the ship is of course of great defensive value.

It has been the fashion of late to decry mortars as weapons of coast defense, and Congress has recently refrained from appropriations for their further construction. Extensive and thorough tests of mortar firing made last spring at Fort Preble, Portland Harbor, have, however, demonstrated the great accuracy of mortars, and have also shown that their accuracy can be relied upon through a much wider range, both far and near, than was formerly supposed. I think confidence in them should be resumed, and appropriations for their construction and emplacement continued in accordance with the original plan of defense.

Most valuable experience and suggestion and great practical benefit have been received by all branches of the service concerned in coast defense, from a series of joint maneuvers participated in by the Army and the Navy on the New England coast during September. This movement was undertaken on the suggestion of the Chief of Artillery, and took the form of simulated attacks by the Navy upon the defenses at the eastern end of Long Island Sound, at New London, at the entrance of Narragansett Bay, and at New Bedford. They were car-

ried out with the most admirable spirit and efficiency by both branches of the service. The Army was much gratified by the effective participation with them of the First Massachusetts Heavy Artillery and two companies of Connecticut Heavy Artillery; and with the Navy the naval reserves of New York, Connecticut, Rhode Island, and Massachusetts took part. The Thirteenth New York Heavy Artillery was most desirous to take part, but was prevented by a lack of State appropriations. An actual attempt to use tools is the best way to learn whether they are in good order and are complete, and it is also the best way to learn how to use them. The advantage gained in this way by the Engineer, Ordnance, Signal, and Artillery Corps of the Army, and I doubt not also by the officers of the Navy, more than justifies the undertaking and indicates the wisdom of annual repetitions of the exercise at different points upon the coast.

I append hereto a memorandum by the Chief of Artillery, marked "Appendix D," and a memorandum by General MacArthur, marked "Appendix E," especially devoted to the general effect of the work upon the efficiency of the Army.

Observers of our coast-defense work sometimes speak of it as defective because it is incomplete. It is indeed incomplete. It is only about half finished. It is a work which requires time and has been begun but recently. Before the war with Spain it proceeded in a very leisurely way. Since the beginning of that war it has been pressed forward with great activity. The work was commenced in 1888; but for the eight years which followed prior to 1896 the total appropriations for the construction of fortifications amounted to but $3,521,000, or an average of $440,000 a year, while for the last seven years, beginning with 1896, the appropriations have amounted to $22,236,000, or an average of $3,176,000 a year, an annual increase of more than sevenfold. The appropriations for the construction of guns and carriages for seacoast defense for the eight years prior to 1896 were but $8,100,000 (not including the unsuccessful dynamite gun), an average annual rate of $1,012,000, while the appropriations for the same purposes for the last seven years were $24,193,000, or an annual average of $3,456,000, an annual increase of more than threefold. Out of the $58,000,000 expended for both classes of work, over $46,000,000 have been appropriated in the last seven years.

The Endicott board plan of coast defense contemplated the expenditure of over $100,000,000. Before 1896 we were progressing at a rate which would have required seventy years to complete the defenses according to the plan. Since 1896 we have been progressing at a rate which will finish the defenses according to the plan in fifteen years. With a half-finished work so recent and so rapidly pressed it follows necessarily that a formative process is constantly going on, mistakes are being made and corrected, new experiments are being made, new

things are being learned, and many difficult problems remain still unsolved.

It follows also that neither the officers nor the men of the artillery have as yet had much opportunity to become proficient in the use of the new weapons, and there is great need for practical instruction and training in their use.

Another reason why there is special urgency for the training of the artillery is the great preponderance of new and inexperienced officers and men. Before the Spanish-American war we had but five regiments of artillery. We now have a corps which is equivalent to thirteen regiments, two regiments being added in 1899 and the equivalent of six regiments in 1901. Of course the majority of the officers and the great majority of the men are new. Every lieutenant in the Artillery Corps has come in since the act of February 2, 1901.

The facts which I have now stated make the kind of exercise furnished by the joint Army and Navy maneuvers of last September of the utmost importance. I urge that appropriations to be made by Congress shall be such as to provide for a continuance of the same practice, and to provide for the most liberal allowances of ammunition and projectiles for general target practice with full service charges in which the entire coast artillery can take part. It is a gratifying fact that the Chief of Engineers, Chief of Ordnance, Chief Signal Officer, and Chief of Artillery are working together in hearty cooperation and sympathy to accomplish the desired results, and that their corps are generally working with them, inspired by the same spirit. The time of mutual fault-finding appears happily to have been succeeded by a time of mutual helpfulness.

The progress of events and changes in ordnance and ship construction, since the Endicott Board of 1886 determined upon the plan of coast defense along the lines of which we are now working, have made it necessary to consider the defense of many points not considered by that board. Porto Rico, Culebra, naval and coaling stations in Cuba, and possibly the Danish Islands—all in a region made specially important by the probable construction of the Isthmian Canal—Hawaii, Guam, and the Philippines, and possibly the Lake ports and the St. Lawrence River, should be considered with reference to the construction of defensive works in the same way that the Endicott Board considered our Atlantic and Pacific coasts. I concur in the recommendation of the Chief of Engineers that a similar board should be created for that purpose by Congress, constituted, like the Endicott Board, of the Secretary of War, the Chiefs of Engineers, Ordnance, and Artillery, one high ranking officer of each of those branches of the service, two naval officers of high rank, and two civilians expert in the subject of our foreign commercial relations.

FIELD ARTILLERY.

The series of tests and competitive trials which have been conducted for two years past under the direction of the Board of Ordnance and Fortification for the selection of new models of field gun and carriage have been concluded, and arrangements have been made for the construction of new guns and carriages to the extent of the appropriations now available. The new gun will have a caliber of 3 inches, and will fire a projectile weighing 15 pounds, with an initial velocity of 1,700 feet per second. It will be of the long recoil type, and will use fixed ammunition. It is capable of firing about six times as rapidly as the field guns which we now use, so that one of the new guns will be able to throw as many shells at an enemy as a whole 6-gun battery of the present type. This great increase in the effectiveness of field artillery is of special value to the United States, because we are always weak in artillery in proportion to our infantry. A well-organized army calls for a due proportion between artillery and infantry. When we go to war we can raise a volunteer infantry with great rapidity, but we can not increase our artillery proportionately. An increase in the relative effectiveness of field artillery tends to do away with the resulting disproportion, and makes it possible for us to raise a much larger well-balanced army than we could otherwise.

SMALL ARMS.

The Ordnance Department has produced a rifle which it considers an improvement upon the present service rifle. It is clearly superior to the present rifle in some respects. It is a bolt gun, caliber .30, having a clip magazine under the chamber instead of at the side, and therefore better balanced than the present gun. It continues the 220-grain bullet, but increases the charge of powder from 37.6 grains to 43.3 grains. It gives an initial velocity of 2,300 feet per second as against 2,000 of the present rifle, a striking energy at 1,000 yards of 447.9 foot-pounds as against 396.2 for the present rifle. It has a flatter trajectory and weighs about a pound less. I have authorized the construction of 5,000 for issue and practical trial in the service.

The enlargement of the capacity of the Springfield Armory for the manufacture of rifles and the addition at the Rock Island Arsenal of a plant for that purpose are approaching completion. The total producing capacity of the two establishments will then be 650 arms per day of eight hours, and in an emergency they would be capable of producing 1,500 per day.

SERVICE UNIFORMS.

The great range of the modern rifle, which enables a soldier to kill his adversary with great accuracy at a distance of several miles,

if he can distinguish him from the surrounding landscape, has led to a curious reversal of military desires in the matter of dress. Instead of devising things to wear which will make the soldier frightful and awe-inspiring to his enemy, the whole military world is looking for clothing which will make its wearers as inconspicuous as possible. For several years we have been conducting extensive experiments to determine the visibility of different colors and materials under different circumstances and at different distances; and in March last a board of officers was convened to consider the subject of uniforms, and the results of these experiments were submitted to it. The result is the selection, for service uniforms, of an olive-drab, which is found to be, under average conditions, the least visible color at considerable distances, and which, after long-continued trials, the Quartermaster's Department has succeeded in making a fast color for woolen material to meet the requirements of cold climates, as well as for the cotton khaki used in the Tropics. This will be worn in place of the khaki of the present color, and it will be available for both hot and cold climates, the material being varied to suit the climate.

The traditional blue uniform will be retained as dress uniform for both officers and men.

The Board at the same time recommended a number of minor changes in uniforms, the good sense of which has long been apparent: notably, replacing the heavy and uncomfortable helmet for foot and mounted troops by suitable dress and service caps to be worn except where the campaign hat is prescribed, and the substitution of dull bronze for bright buttons and other articles liable to catch and reflect the light, and the use of clouded scabbards and russet leather belts.

The report of the Board has been approved, and the new articles of clothing will be introduced as rapidly as due economy in the disposition of the present stock on hand permits.

MILITARY EDUCATION.

An examination of the sources from which are drawn the officers of the Army, as now constituted under the act of February 2, 1901, shows how important it is to go on with the military education of officers in some such general and systematic way as was outlined in my last report. Of the 2,900 officers of the line of the Army, 1818 have been appointed since the beginning of the war with Spain. Of these 1818 but 276 were supplied by the West Point Academy; the remaining 1,542 have come—414 from the ranks, 512 from civil life, and 616 from the volunteers of the war with Spain and in the Philippines.

The volunteers and the enlisted men have of course acquired useful experience, and they were all selected on the ground of their military conduct and intelligence. Yet it is generally true of the whole 1542,

constituting more than one-half of all the officers of the line, that they have had no systematic military education. They constitute nearly the entire body of first and second lieutenants. After some years, when their seniors have passed off the stage, they will have to supply our generals and colonels and chief staff officers charged with the instruction, discipline, and command of our forces. Unless the theory of military education under which we have maintained the Academy at West Point for a century is all a mistake, it is very important to give to this class of young officers, now that they are in the Army, some degree of the educational advantages which the West Point men get before they are commissioned. The same will be true of future accessions to the force of officers, for the West Point Academy, even with the recent enlargements, can not be expected to fill more than about two-thirds of the annual vacancies which will occur in the ordinary course of life.

The development of the general scheme of systematic instruction, provided for by the order of November 27, 1901, annexed to my last report, has made satisfactory progress during the year. As soon as the officers selected for the first War College Board could be withdrawn from the other duties in which they were engaged, that board was constituted by the detail of Maj. Gen. S. B. M. Young, Brig. Gen. William H. Carter, Brig. Gen. Tasker H. Bliss, Maj. Henry A. Greene, and Maj. William D. Beach. The plans for the buildings of the new War College and the new Engineers' School, to be erected on the old Washington Barracks Reservation, under authority of the act of June 30, 1902, have been prepared and approved. The building of the necessary sea walls and the filling in of the low ground forming part of both sites were commenced by the Engineer Department immediately after the passage of the act, and the construction of the buildings will begin presently under the direction of the Corps of Engineers.

In the meantime, the Engineers' School has occupied the old Washington Barracks buildings, and the War College Board has secured a house for temporary use near the War Department. The board has addressed itself especially to reinstating and regulating military instruction in the military schools and colleges of the country, which may serve as a source for future appointments of second lieutenants from civil life; to the establishment of systematic instruction of officers in the Army posts, and to organizing the General Service and Staff College at Fort Leavenworth on the foundation of the Infantry and Cavalry School which existed there before the war with Spain. Seventy-seven officers have been detailed as instructors at the military schools and colleges. Ninety-seven officers have been detailed as students at the General Service and Staff College, and are now in attendance at that institution. Thirty officers are in attendance as students

at the Artillery School at Fortress Monroe, ten at the School of Submarine Defense at Fort Totten, and eleven at the Engineers' School at Washington Barracks. The enlargement of accommodations and facilities at these institutions, now in various stages of progress, will make it possible to materially enlarge these numbers.

Undoubtedly the military schools and colleges to which details of officers as instructors are made will be found to differ widely in their thoroughness and efficiency, and the maintenance of thorough inspection and supervision by the War College Board will be essential. It is the purpose of the Department to discontinue details to institutions which, upon such inspection, are found not to come up to the requisite standard, and to give to the graduates of the thorough and efficient institutions a preference in recommendations for appointment as second lieutenants in the Regular Army. The same observation will doubtless apply to the post schools, which will vary according to the capacity and zeal of the commanding officer. The same systematic inspection by the War College Board is designed to hold commanding officers to the same degree of responsibility for an efficient school as for a well-disciplined force.

Annexed hereto is an order by the Secretary of War, dated July 22, 1902, addressed to the officers of the Army, relating to their duties in the matter of military education, marked "Appendix F;" and an order prepared by the War College Board, dated August 1, 1902, prescribing regulations and the course of instruction in the General Service and Staff College, marked "Appendix G;" and an order prepared by the War College Board, dated August 9, 1902, prescribing regulations for the details to and military instruction to be given by military schools and colleges, marked "Appendix H;" and an order prepared by the War College Board, dated September 22, 1902, prescribing regulations and the course of instruction to be followed in the post schools of the Army, marked "Appendix I." An examination of these prescribed courses will indicate the practical character of the instruction required and the wide range of subjects with which a well-equipped officer must become familiar.

The excellent work done by the Medical Department in the Army Medical School in this city should not pass unnoticed. The school takes the young surgeon, who has already graduated from some regular medical college, and has passed his examination and received a commission in the Medical Corps, and instructs him to adapt his knowledge to the special requirements of military service in surgery, medicine, and hygiene. The general hospital on the Washington Barracks reservation which this school has been using for purposes of special instruction will no longer be available after the construction of the engineers' school at that place. It is very desirable that new and adequate accommodations be provided for the continu-

ance of the hospital at some other point in or near the city, and for the continuance and enlargement of this most important branch of instruction.

The Military Academy at West Point on the 11th of June, 1902, celebrated with appropriate ceremonies the completion of a hundred years of honorable and useful service. The advance of the world in military science, the increasing complexity of the machinery and material used in warfare, and the difficulty of the problems involved in transporting, supplying, and handling the great armies of modern times, make such an institution even more necessary to the country now than when it was founded by the fathers of the Republic a hundred years ago.

The efficiency of the institution and the high standard of honor and devotion to duty which have characterized its graduates justify the continuance of public confidence. The wise liberality of Congress has enabled the institution to begin its second century with the well-founded hope of larger and long-continued usefulness. The present academic year has opened with 471 cadets on the rolls of the Academy, the largest number ever belonging to it at one time. Under the new regulations relating to admissions, examinations of candidates were held on the 1st of May in this year, at sixteen army posts throughout the country, selected with a view to reducing to a minimum the expenses of candidates in attending. Under the authority of the act of March 2, 1901, the examinations were made to conform to the courses of study ordinarily covered in the high schools and academies of the country by boys of the average age of appointees to the Academy. Sixty-two cadets were admitted upon certificates from educational institutions in which they had prepared, following the course which has been generally adopted by the colleges and universities of this country.

The curriculum has been modified somewhat, reducing the time expended in pure mathematics and increasing the attention to Spanish, English, and military hygiene; decreasing the theoretical course in philosophy and increasing the time given to chemistry and electricity. The increase of practical instruction has been continued, and a new practice, which I hope will be long continued, has been inaugurated by taking the first class to the battlefield of Gettysburg, where for several days in April they studied the lessons of that great conflict upon the field.

The discipline has been good and the practice of hazing appears to have been abandoned. But one case in which it was attempted, and that in a mild form, was brought to the attention of the authorities of the Academy during the year. The offending cadet was tried by court-martial, and being found guilty was dismissed, pursuant to law.

The provision of the Military Academy act of June 28, 1902,

authorizing the enlargement and improvement of the plant at West Point upon a plan involving a total expenditure of $5,500,000, has caused much solicitude by the Department and by the officers of the Academy, lest in rearranging and rebuilding a result might be reached out of harmony with the historic traditions of the institution and the beauties of the site, with its mountains and plain and river. After much consideration the following method of working out the plan has been adopted: A board composed of officers of the Academy was convened to prepare in detail a statement of the practical requirements of the institution which were to be met by the enlargement and rearrangement.

Upon the coming in of that report, ten of the leading architects of the country were invited to submit in competition general preliminary plans showing the proposed arrangement of buildings and treatment of the ground to meet the various requirements of the Academy, based upon the data thus furnished, together with an indication of the architectural treatment of the separate buildings. From the plans thus submitted one will be selected, and the author of that plan will be expected to develop it into the complete plan authorized by the statute. Thereafter, as the statute requires, the work will proceed with the assistance of a consulting architect, who will naturally be either the successful competitor or some one connected with his establishment.

THE MILITIA SYSTEM.

Early in the last session a bill was prepared by the War Department, embodying the views expressed in my last report, upon the treatment of the National Guard of the several States by the Federal Government, the relation of the Guard to the militia and volunteer systems, and preparation in advance for the organization of volunteers in time of war. This bill was submitted to the chairman of the Committee on Military Affairs of the Senate, the chairman of the Committee on Militia of the House, and to a convention of officers of the national guard organizations which met in Washington in January, 1902. The convention appointed a special committee to consider and report upon the proposed bill, and after some modifications it was reported favorably to the convention, which after thorough discussion adopted a resolution approving the measure and requesting its enactment by Congress. The bill thus approved was introduced in the Senate by Mr. Hawley, and in the House by Mr. Dick, who rendered invaluable service in the framing and advocacy of the measure. The House Committee on Militia considered it with great care, and with extensive and improving additions returned it to the House with a unanimous report in its favor, and it was passed by the House. It is now pending before the Committee on Military Affairs of the Senate (H. R. 15345, Fifty-seventh Congress, first session).

I earnestly urge that this measure be made a law. It is really absurd that a nation which maintains but a small Regular Army and depends upon unprofessional citizen soldiery for its defense should run along as we have done for one hundred and ten years under a militia law which never worked satisfactorily in the beginning, and which was perfectly obsolete before any man now fit for military duty was born. The result is that we have practically no militia system, notwithstanding the fact that the Constitution makes it the duty of the Federal Congress "to provide for organizing, arming, and disciplining the militia," and "for calling forth the militia to execute the laws of the Union, suppress insurrections, and repel invasions." The National Guard organizations of the several States have grown up in default of any national system and to meet local requirements. Their relations to the Federal Government have never been defined or settled. The confusion, controversy, and bad feeling arising from this uncertain status were painfully apparent at the beginning of the war with Spain; and it must always be the same until Congress shall exercise its constitutional power over the subject. Repeated efforts have been made to accomplish this result. Two years after the passage of the present law of 1792, President Washington addressed Congress on the subject in these words:

> The devising and establishing of a well-regulated militia would be a genuine source of legislative honor and a perfect title to public gratitude. I therefore entertain a hope that the present session will not pass without carrying to its full energy the power of organizing, arming, and disciplining the militia, and thus providing, in the language of the Constitution, for calling them forth to execute the laws of the Union, suppress insurrections, and repel invasions.

President Jefferson, eleven years later, in 1805, said:

> I can not, then, but earnestly recommend to your early consideration the expediency of so modifying our militia system as, by a separation of the more active part from that which is less so, we may draw from it, when necessary, an efficient corps for real and active service, etc.

And in 1808 he said:

> For a people who are free, and who mean to remain so, a well-organized and armed militia is their best security. It is therefore incumbent on us at every meeting to revise the condition of the militia, and to ask ourselves if it is prepared to repel a powerful enemy at every point of our territories exposed to invasion. Some of the States have paid a laudable attention to this subject; but every degree of neglect is to be found among others. Congress alone has power to produce a uniform state of preparation in this great organ of defense. The interest which they so deeply feel in their own and their country's security will present this as among the most important objects of their deliberation.

President Madison said in 1816:

> An efficient militia is authorized and contemplated by the Constitution and required by the spirit and safety of free government. The present organization of our militia is universally regarded as less efficient than it ought to be made, and no organization can be better calculated to give to it its due force than a classification which will

assign the foremost place in the defense of the country to that portion of its citizens whose activity and animation best enable them to rally to its standard, etc.

President Monroe said in 1817:

An improvement in the organization and discipline of the militia is one of the great objects which claims the unremitted attention of Congress.

Almost every President, from Washington down, has urged the importance of this subject upon the attention of Congress. The chief reason why nothing has been done has been that nobody could agree upon any one system. Everybody was agreed upon the general principle, but a majority of all the people interested were opposed to every particular concrete method suggested to give it effect.

The bill which has now passed the House is the result of extensive and painstaking conference among representatives of all the classes of citizens especially interested in the subject and especially qualified to express opinions upon it. It does not represent fully anyone's view, but it contains many important provisions upon which a general agreement has been reached; and it will, I am sure, if enacted, be a great step in advance toward effective preparation for war otherwise than by the maintenance of a standing army.

The fundamental idea of the bill is to recognize the value to the National Government of the National Guard, which is capable of being utilized, first, as active militia when called out by the President for the specific purposes enumerated in the Constitution; second, as an already organized volunteer force when its organizations respond as such to calls for volunteers for general military purposes under authority of Congress; and, third, as the great school of the volunteer soldier, the benefits of which are received by the country when the members of the guard respond individually to calls for volunteers. The bill undertakes to regulate and provide for these various relations of the National Guard and its members to the general system; to conform the organization, armament, and discipline of the guard to that of the Regular and Volunteer armies of the United States; to establish closer relations and better cooperation between the National Guard and the Regular Army; to promote the efficiency and dignity of the guard as a part of the military system of the United States.

To aid in accomplishing these objects, and in recognition of the benefits to the General Government that come from the Guard altogether outside of its service to the individual States, the bill provides that the General Government shall furnish to the Guard the same arms which it furnishes to the Regular Army, and for the voluntary participation by the Guard with the Regular Army in maneuvers and field exercises for brief periods in each year. The bill also contains provisions making the National Guard organizations which choose voluntarily to go beyond the limitations of militia service in effect a First Volunteer Reserve, and further provisions for the enrollment of a

Second Volunteer Reserve not exceeding 100,000, to be composed of trained men who have served in the National Guard or in the Regular Army or the volunteer armies of the United States. These would constitute the first volunteer regiments after the National Guard Volunteers under any call by Congress. It also provides for ascertaining by practical tests, in advance of a call for volunteers, the fitness of members of the National Guard, graduates of the military schools and colleges, and other citizens with military training, to hold volunteer commissions, thus constituting an eligible list from which in case of a call for volunteers the officers of the Second Reserve must be taken, and the officers of the general body of volunteers may be taken. With the system provided for by the bill carried into effect we should be able while maintaining a standing army of but 60,000 men to put a force of at least 250,000 well-trained men into the field instantly upon a declaration of war, and the cost would be less than to maintain but a few additional regiments of regular troops.

The military force of the United States would then be as follows:

First. The Regular Army, capable of enlargement by the President, when he sees war coming, to 100,000.

Second. Such of the organized militia (already trained as a national guard, and just as valuable, when used in the manner hereinafter indicated, as any other troops) as the President shall see fit to call into the service of the United States for not exceeding nine months, to repel invasion.

Third. A First Volunteer Reserve, composed of such companies, troops, and regiments of the organized militia already trained as a national guard as volunteer by organizations with all their officers and men.

Fourth. A Second Volunteer Reserve, composed of men previously enrolled and having previous military training in the National Guard, the Regular Army or the Volunteer Army, and commanded by officers whose fitness has been previously ascertained by practical tests under the provisions of the militia act.

Fifth. Such further volunteers as it may be necessary to call forth from the States, according to their respective quotas, and commanded by regimental officers appointed by the governors of the States.

A conservative estimate of the number which would be included in the first four classes of troops, who have already had military service and will be available for immediate action, is from 250,000 to 300,000.

The number of the fifth class—volunteers who may or may not have had previous service—has no limit, except the possibilities of transportation and supply.

The capacity of the National Guard organizations in general to serve effectively as organizations, either militia or volunteer, in the national army in case of war depends very largely upon the aid which they

receive from the National Government. The Guard is now armed with a variety of weapons of different kinds and calibers, including two different calibers of the obsolete Springfield rifle, the Lee, the Remington-Lee, the Winchester, and the Krag-Jörgensen. In several instances different National Guard organizations of the same State are armed with different weapons of different calibers. Among all the 115,000 National Guardsmen of the different States and Territories only about 4,000 have the modern service rifle of the United States Army. With the exception of these 4,000 rifles the arms of the Guard would be practically worthless in time of war, not merely because they are inferior but because the Guard would have to look to the United States Government for their ammunition, and the Government will have no ammunition for the kind of rifles they carry: they would have to look to the Government to replace the arms lost or broken in service, and the Government will be unable to supply the same kind. The militia and the volunteer National Guard organizations in general would, therefore, be obliged to throw away their present arms at the beginning of a war and get reequipped with weapons the use of which they had never learned.

THE MILITIA AND COAST DEFENSE.

One of the most valuable services which can be rendered to the country by its militia, and the one which can be made the easiest and most natural for it to render, is to supplement the regular force in manning the coast defenses in time of war. Our present regular force is none too large to take care of the guns and the machinery of the fortifications in time of peace. It will be quite insufficient in war. The number of artillerymen for which Congress was asked to provide in the act of February 2, 1901, was intentionally made small in view of the manifest practicability of supplementing it by a well-trained militia force, available in case of threatened attack. Manning the coast fortifications is constitutional militia work, for it is always to repel invasion. It can be undertaken by citizens living in the neighborhood of the fortifications with less disturbance and sacrifice than any other military duty, because it does not take them far away from their homes and their business.

The handling of the modern high-power and rapid-fire guns and the complicated machinery by which they are worked requires, it is true, special training, but there is no trouble in securing a reasonable degree of that for heavy artillery militia organizations. For the past three years I have been following closely the work of the First Massachusetts Heavy Artillery, which has been admitted each year to one or another of the defenses on that coast for practice. The officers at all the fortifications speak in high terms of the intelligence and readiness with which they have acquired facility in doing the work. Many of

them are mechanics and take naturally to the machinery of defense. On the other hand, the members of the regiment evidently take great and sustained interest and satisfaction in the performance of their duties. The same is true of the Connecticut artillery organization which took part in the recent seacoast maneuvers, and of the Thirteenth New York Heavy Artillery, and I doubt not of other organizations with which I am less familiar.

If the militia bill above described becomes a law, an effort should be made to procure the organization of a National Guard force of heavy artillerymen in the neighborhood of each coast-defense fortification, with the understanding that whenever the President finds occasion to call out militia to repel invasion that organization will be called into that fortification. In the meantime an immediate and special relation should be established between the militia organization and the fortification for the purpose of practice and instruction. They should be made as familiar as possible with the use of the guns and methods of defense at that particular point. In many cases it will be practicable to give them facilities for meeting and keeping their equipment on the military reservation, which would make unnecessary any outside armory for their use. Such an organization could readily perform all its duties to the State serving as infantry, but it could at the same time be distinctly known and constantly prepared for service as the militia reserve of the fortification with which it sustains the relations described.

Another very important function to be performed by militia, and having the same characteristic of not requiring militiamen to render any service except for the defense of their homes, is the service to be rendered by infantry in the defense of our coast fortifications against attack in reverse by land. That is a subject which ought to receive early and earnest attention on the part of the Federal Government. It is of great importance that an adequate force should be ready to perform that service, should be ready to take their places without confusion, and that there should be a perfect understanding as to where the force is to come from, where they are to be posted, and how they are to be supplied and maintained.

The National Guard contains two widely different elements. One is composed of men who wish to perform their duty to the State and as members of the militia, but do not wish, or do not feel at liberty, to leave their families or their business interests and become soldiers for all purposes, liable to be sent away for distant military operations. The other element wish to go wherever there is adventure and a chance to fight. The amount of strictly local military work of the highest importance to be done in case of war is so great that the whole National Guard force, of the seacoast States at all events, can be made just as useful as if they all became volunteers for all purposes. In

order to accomplish this, however, there should be a careful prearrangement as to the distribution of duties.

FORT RILEY MANEUVERS AND CAMP SITES.

A good example of what can be done in the way of joint maneuvers and exercise by regulars and militia, to the great advantage of both, in preparation for general military service, has been furnished by the concentration and exercise of troops at Fort Riley in the latter part of September. Three regiments of regular infantry, two regiments of infantry of the National Guard of Kansas, a battalion of Colorado infantry, a regiment of regular cavalry, five batteries of regular field artillery, two batteries of Kansas field artillery, a battalion of regular engineers, and detachments of the regular Signal Corps and Hospital Corps were concentrated at that point and engaged for from five days to two weeks in practicing field operations, involving work from the simplest outpost and patrol duties up to and including maneuvers by brigade and division.

A large number of National Guard officers, besides those commanding troops in the maneuvers, and representing twenty different States and two Territories, were present. A large number of National Guard troops of other States would have been present had there been any appropriations to pay their expenses. Both the officers of the Guard and of the Regular Army unite in the opinion that both branches of the service received great benefit; and the good understanding and friendly feeling established between the two classes of officers who were present at the maneuvers are most gratifying. Jealousy, superciliousness, or a suspicion of it, and bad feeling between regular and volunteer officers have been some of the most fruitful causes of dissension and hindrance to general military efficiency in this country. The best way to put an end to this is to bring the officers together and get them to know each other and work with each other with a common purpose.

General Bates, the commander of the Department of the Missouri, says in his report:

> The value of such concentrations and maneuverings can not be overestimated, either to the regular forces or to the National Guard, as it gives to both an opportunity for observing the appearance and formation of a division under various conditions, and affords to officers of the several arms of the service a chance for seeing the evolutions and capabilities of the other arms, and enables them to enlarge their circle of military acquaintanceship, which can rarely be done without absorbing new ideas upon military subjects. During the exercises under discussion young officers had constantly impressed upon them the value of studying the terrain, with a view to protecting their commands by the accidents of the ground, and of seizing advantageous positions. The lessons learned in this connection at Fort Riley may be the means of saving many lives in future hostilities. The power of modern weapons was well illustrated and accentuated by each opponent maneuvering for position.

The report quoted from is annexed hereto, marked "Appendix K."

At the end of the encampment the officers representing Maryland, Texas, Nebraska, Pennsylvania, New Jersey, North Dakota, Michigan, Rhode Island, Massachusetts, Ohio, Indiana, Georgia, Illinois, California, Florida, New York, Virginia, and Oklahoma met and passed resolutions expressing their opinion as to the benefit of what had been done.

A copy of the resolutions, signed by the respective officers, is annexed hereto marked "Appendix L."

It is to be hoped that before another autumn the passage of the militia bill will enable the War Department to facilitate the attendance of greater numbers of National Guard troops for a repetition of these maneuvers on a larger scale.

Section 35 of the act of February 2, 1901, directed the Secretary of War to cause preliminary examinations and surveys to be made for the purpose of selecting four sites with a view to the establishment of permanent camp grounds for instruction of troops of the Regular Army and National Guard. In compliance with this direction such preliminary examinations and surveys have been made at places selected by the board of general officers upon military posts and camp sites already mentioned in this report; and on the 19th of May, 1902, the reports of the examinations and surveys were transmitted to Congress. (House Doc. No. 618, Fifty-seventh Congress, first session). The sites selected by the board were at Fort Riley, Kans., where the present reservation consists of about 20,000 acres; one in the vicinity of Chickamauga Park, Ga., where a not very expensive addition to the present park grounds now owned by the Government would suffice; one in the Conewago Valley in Lebanon, Dauphin, and Lancaster counties, Pa.; and one on the Nacimiento Ranch, in Monterey and San Luis Obispo counties, Cal.

Reports of examinations and estimates of the cost of several other sites in Indiana, Kentucky, New Mexico, Texas, and Wisconsin were also transmitted for the consideration of Congress. It is to be hoped that Congress will proceed to carry out the design of the act of February 2, 1901, by authorizing the purchase of a sufficient number of sites in different parts of the country to make it possible to give to the National Guard of all the States, and to the regular troops stationed in each section, the benefits of annual maneuvers similar to those which have been inaugurated at Fort Riley.

GENERAL STAFF.

The most important thing to be done now for the Regular Army is the creation of a general staff. I beg to call attention to the remarks made upon this subject under the head of "Improvement of Army organization" in the report for 1899 and under the head of "General

staff" in the report for 1901. Since the report for 1899 was made many of the important measures then recommended for the greater efficiency of the Army have been accomplished, or are in course of accomplishment under authority conferred by legislation. Our military system is, however, still exceedingly defective at the top. We have a personnel unsurpassed anywhere, and a population ready to respond to calls for the increase of the personnel in case of need, up to the full limit at which it is possible to transport and subsist an army. We have wealth and a present willingness to expend it reasonably for the procurement of supplies and material of war as plentiful and as good as can be found in any country. We have the different branches of the military service well organized, each within itself, for the performance of its duties. Our administrative staff and supply departments, as a rule, have at their heads good and competent men, faithful to their duties, each attending assiduously to the business of his department.

But when we come to the coordination and direction of all these means and agencies of warfare, so that all parts of the machine shall work true together, we are weak. Our system makes no adequate provision for the directing brain which every army must have, to work successfully. Common experience has shown that this can not be furnished by any single man without assistants, and that it requires a body of officers working together under the direction of a chief and entirely separate from and independent of the administrative staff of an army (such as the adjutants, quartermasters, commissaries, etc., each of whom is engrossed in the duties of his own special department). This body of officers, in distinction from the administrative staff, has come to be called a general staff. There has been much misunderstanding as to the nature and duties of a general staff. Brig. Gen. Theodore Schwan, in his work on the organization of the German army, describes it as follows:

> In Prussia, at least, the term has been exclusively and distinctively applied, since about 1789, to a body of officers to whom, as assistants to the commander in chief and of his subordinate generals, is confided such work as is directly connected with the designing and execution of military operations. That in Germany, as elsewhere, chiefs of special arms, heads of supply departments, judge-advocates, etc., form an important branch of the higher commands, goes without saying, but they are not included in the term "general staff." Clausewitz's dictum that the general staff is intended to convert the ideas of the commanding general into orders, not only by communicating the former to the troops, but rather by working out all matters of detail, and thus relieving the general from a vast amount of unnecessary labor, is not a sufficient definition of general staff duties, according to Von Schellendorf (upon this question certainly the better authority), as it fails to notice the important obligation of the general staff officer of constantly watching over the effectiveness of the troops, which would be impaired by a lack of attention to their material welfare. Out of this obligation grows, he says, the further duty of furnishing to the heads of the supply departments and other officers attached to

headquarters such explanations touching the general military situation, or the effect of a sudden change therein, as will enable them to carry out intelligently what is expected of them. The general staff thus becomes a directing and explaining body, and its chief, therefore, is in some respects the head of the whole staff. It follows that of the two terms, staff and general staff, the Germans regard the former as the more comprehensive one and as embracing the latter.

It is conceded on all hands that the almost phenomenal success that has attended the German (Prussian) arms during the last thirty years is due in a large degree to the corps of highly trained general staff officers which the German army possesses.

Neither our political nor our military system makes it suitable that we should have a general staff organized like the German general staff or like the French general staff; but the common experience of mankind is that the things which those general staffs do, have to be done in every well-managed and well-directed army, and they have to be done by a body of men especially assigned to do them. We should have such a body of men selected and organized in our own way and in accordance with our own system to do those essential things. The most intelligible way to describe such a body of men, however selected and organized, is by calling it a general staff, because its duties are staff duties and are general in their character.

The duties of such a body of officers can be illustrated by taking for example an invasion of Cuba, such as we were all thinking about a few years ago. It is easy for a President, or a general acting under his direction, to order that 50,000 or 100,000 men proceed to Cuba and capture Havana. To make an order which has any reasonable chance of being executed he must do a great deal more than that. He must determine how many men shall be sent and how they shall be divided among the different arms of the service, and how they shall be armed, and equipped, and to do that he must get all the information possible about the defenses of the place to be captured and the strength and character and armament of the forces to be met. He must determine at what points and by what routes the place shall be approached, and at what points his troops shall land in Cuba; and for this purpose he must be informed about the various harbors of the island and the depth of their channels; what classes of vessels can enter them; what the facilities for landing are; how they are defended; the character of the roads leading from them to the place to be attacked; the character of the intervening country; how far it is healthful or unhealthful; what the climate is liable to be at the season of the proposed movement; the temper and sympathies of the inhabitants; the quantity and kind of supplies that can be obtained from the country; the extent to which transportation can be obtained, and a great variety of other things which will go to determine whether it is better to make the approach from one point or from another, and to determine what it will be necessary for the Army to carry with it in order to succeed in moving and living and fighting.

All this information it is the business of a general staff to procure and present. It is probable that there would be in such case a number of alternative plans, each having certain advantages and disadvantages, and these should be worked out each by itself, with the reasons for and against it, and presented to the President or general for his determination. This the general staff should do. This can not be done in an hour. It requires that the staff shall have been at work for a long time collecting the information and arranging it and getting it in form to present. Then at home, where the preparation for the expedition is to be made, the order must be based upon a knowledge of the men and material available for its execution; how many men there are who can be devoted to that purpose, from what points they are to be drawn, what bodies of troops ought to be left or sent elsewhere, and what bodies may be included in the proposed expedition; whether there are ships enough to transport them; where they are to be obtained; whether they are properly fitted up; what more should be done to them; what are the available stocks of clothing, arms and ammunition, and engineers' material, and horses and wagons, and all the innumerable supplies and munitions necessary for a large expedition; how are the things to be supplied which are not ready, but which are necessary, and how long time will be required to supply them.

All this and much more necessary information it is the business of a general staff to supply. When that has been done the order is made with all available knowledge of all the circumstances upon which the movement depends for its success. It is then the business of a general staff to see that every separate officer upon whose action the success of the movement depends understands his share in it and does not lag behind in the performance of that share; to see that troops and ships and animals and supplies of arms and ammunition and clothing and food, etc., from hundreds of sources, come together at the right times and places. It is a laborious, complicated, and difficult work, which requires a considerable number of men whose special business it is and who are charged with no other duties.

It was the lack of such a body of men doing that kind of work which led to the confusion attending the Santiago expedition in the summer of 1898. The confusion at Tampa and elsewhere was the necessary result of having a large number of men, each of them doing his own special work the best he could, but without any adequate force of officers engaged in seeing that they pulled together according to detailed plans made beforehand. Such a body of men doing general staff duty is just as necessary to prepare an army properly for war in time of peace as it is in time of war. It is not an executive body; it is not an administrative body; it acts only through the authority of others. It makes intelligent command possible by procuring and arranging information and working out plans in detail, and it makes intelligent

and effective execution of commands possible by keeping all the separate agents advised of the parts they are to play in the general scheme.

In creating a general staff I think we should change the designation of the officer whom we have called the Commanding General of the Army to Chief of Staff, and at the same time enlarge his powers by giving him the immediate direction of the supply departments, which are now independent of the Commanding General of the Army and report directly to the Secretary of War. The position of the Commanding General of the Army is not created by statute. It depends entirely upon executive order, and it could be abolished at any time by the President and the position of Chief of Staff could be created in its place. Legislative action, however, is desirable in two directions. One is to provide for the performance of duties of the president of the Board of Ordnance and Fortification and the president of the Board of Commissioners of the Soldiers' Home, both of which have been attached by statute to the position of the Commanding General of the Army. The other line of legislative action needed is to authorize the control of the Secretary of War over the supply departments to be exercised through the Chief of Staff. This probably could not be done except by Congress.

The change of title from "Commanding General of the Army" to "Chief of Staff" would be of little consequence were it not that the titles denote and imply in the officers bearing them the existence of widely different kinds of authority. When an officer is appointed to the position of "Commanding General of the Army" he naturally expects to command, himself, with a high degree of independence, following his own ideas rather than the ideas of others. We cannot ordinarily expect an officer placed in such a position and thus endowed with what purports to be the right and title to command, not to stand up for his right to really command and not to regard any attempt to control his action or limit his power as unjustifiable interference.

The title of Chief of Staff, on the other hand, denotes a duty to advise, inform, and assist a superior officer who has command, and to represent him, acting in his name and by his authority in carrying out his policies and securing the execution of his commands. The officer who accepts the position assumes the highest obligation to be perfectly loyal to his commander, to exclude all personal interest from his advice and representation, and to try, in the most whole-hearted way, to help him to right conclusions, and to successful execution of his policies even though his conclusions may not agree with the advice given. For the successful performance of his duties the chief of staff must have the entire confidence of his commander. In proportion as he merits that confidence, the chief of staff gradually comes to find his advice

usually accepted, and to really exercise the authority of his commander, subject only to the most general directions, just as Von Moltke exercised the authority of King William of Prussia as his chief of staff.

Experience has shown that it is impossible for any officer to really exercise in this country, in time of peace, the powers which appear and are assumed to be conferred along with the title of "Commanding General of the Army." This follows from the constitution of our Government. The Constitution requires the President to be the commander of the Army, and a great variety of laws require the Secretary of War, who directly represents the President, to supervise and direct the expenditure of the vast sums of money appropriated annually by Congress for the support of the Army. As every important movement requires the use of money, so long as the Secretary of War performs this duty faithfully he must practically control the operations of the Army in time of peace, and there can not be any independent command of the Army, except that which the President himself exercises over the Secretary of War and everybody else in the military establishment. It is because Congress has always looked to the civilian Secretary at the head of the War Department to hold the purse strings, that the laws require all the great departments which build the fortifications and furnish the arms, supplies, and munitions of war, and actually expend the money for those purposes, such as the Engineer, Ordnance, Quartermaster's, and Subsistence Departments, to act under the direction of the Secretary, and withhold from the officer who is called "Commanding General of the Army" all control over those departments.

This way of treating the expenditure of money is an expression of the ingrained tendency of the American people to insist upon civilian control of the military arm. Our fathers inherited that from England and we have always held to it. It is not likely to be changed in substance. One result of the arrangement is that the officer who is called "Commanding General of the Army" can not in time of peace really exercise any substantial power at all unless he acts in conformity to the policy and views of the Secretary of War, acting under the direction of the President; that is to say, he can not exercise any independent command; and this must always be so as long as the Secretary of War performs the duties which are imposed upon him by law and which are essential to the maintenance of civilian control over the military establishment. It was the inability to exercise the power which the title of "Commanding General of the Army" appears to carry with it, but which does not really exist, that led General Scott to leave Washington and establish his headquarters in New York and General Sherman to remove to St. Louis, both of them abandoning the attempt to do anything in connection with the administration of the Army in

Washington. And this difficulty has been the cause of almost constant conflict and bitter feeling in the administration of the Army for the past fifty years, to the very great injury of the service and very great loss of efficiency.

It does not follow, however, that the principal and most trusted general of the army can not exercise a great and commanding influence in the control of the army, and practically manage it in all military matters. What does follow is that he can do this only by abandoning the idea of independent command and by assuming the position and performing the functions which I have described as belonging to a chief of staff. General Schofield did this with entire success and rendered great service to the country by doing so. I quote his own words in describing the course he followed:

> Recent experience has served to confirm all the results of my life-long study and large experience that the proper position for the senior officer of the Army on duty at Washington is not that of commanding general, a position which is practically impossible, but that of general in chief, which means in fact chief of staff to the President. The title of general in chief was a permanent one during the entire history of the country up to the time when General Grant became Lieutenant-General.
>
> When I became the commanding general I addressed to the President a letter in which I pointed out to him what had been the result of my study and experience, and saying that the only way was to abandon entirely, which I did during my seven years of service, all pretense of being the commanding general and to content myself with acting as the chief of staff of the Army under the Secretary of War and the President. The result was that perfect harmony prevailed during my time, and I did exercise a legitimate influence in command of the Army, this because I did not claim to exercise anything which the law did not give me.

Everybody is not as self-restrained and sensible as General Schofield, and the best way to secure from others the same kind of good service that he rendered, is to give the officer from whom it is expected a designation which indicates what he is really to do.

TRANSPORT SERVICE.

The reduction of the force in the Philippines has made possible a large reduction of the transport service on the Pacific. The regular service between San Francisco and Manila has been reduced from bimonthly to monthly sailings. Marked economies have been effected in the conduct of the business in San Francisco. Several ships have been sold, although after most extensive and painstaking advertising very inadequate prices have been realized. Three ships, the *Hancock*, *Relief*, and *Lawton*, have been turned over to the Navy Department, which could make profitable use of them, and one, the *Grant*, has been turned over to the Engineer Corps, which can save a hundred thousand and odd dollars more than the ship could be sold for, by using her in river and harbor work. I ask that authority be given for charging the fair value of these ships to the naval and river and harbor appro-

priations, respectively, and crediting them to the appropriation for transportation of the Army against which they now stand charged.

In October bids were invited from commercial lines for transportation of passengers and freight for the Army between San Francisco, Portland, Seattle, and Tacoma and Manila, until June 30, 1903. A number of bids have been received, but the comparative advantage of operating under them has not yet been worked out, and no contract has been awarded. As rapidly as it becomes apparent that the Government business can be done more economically in any part, or as a whole, by this method, it is the purpose of the Department to follow the same course which has been followed upon the Atlantic in discontinuing the use of Government transports, and to put the business in the hands of commercial lines on the basis of open competition.

I am satisfied that it is practicable for private shippers to do all ordinary business much cheaper than it is possible for the Government to do it, under the limitations which rest upon Government action, and that they can afford to do the business for less than it costs the Government and still make a profit. At the same time by following this method the Government will be aiding to build up regular commercial lines between the Pacific coast and Manila, which is much to be desired.

PROMOTION OF INDIVIDUAL ECONOMY IN THE ARMY.

The act of May 15, 1872, under which the Government acts practically as a savings bank for enlisted men, has been very beneficial in its operation. Under that law enlisted men may deposit their savings, in sums not less than $5, with paymasters, and upon deposits of not less than $50, remaining for a period of six months or longer, interest is paid at the rate of 4 per cent per annum. Without some such provision, under the ordinary conditions of army life, the soldier would have no means of investing or taking care of any savings from his pay, and the tendency would be to spend the pay, whenever opportunity offered, up to the full limit.

Under this law deposits of enlisted men's savings for the past four years and the amounts of principal and interest paid to enlisted men against deposits on their leaving the service have been as follows:

Fiscal year ending June 30—	Number of separate deposits.	Aggregate amount of deposits.	Number men paid their deposits on discharge.	Principal paid.	Interest paid.
1899	37,842	$1,496,762.31	28,508	$988,774.63	$61,273.95
1900	91,461	3,215,544.66	27,571	1,028,146.34	43,234.89
1901	111,004	3,438,529.11	78,948	2,955,169.39	114,750.37
1902	80,883	2,660,250.66	104,109	3,002,424.24	147,441.81
Total		10,811,086.74	239,136	7,974,514.60	366,701.02

The amount of savings reported by the Paymaster-General as remaining in the Treasury to the credit of enlisted men on the 30th of June, 1902, was $4,269,244.81. The effect of this arrangement has been to promote economy, discourage useless and profligate expenditure, and to give the men who leave the service an accumulation upon which to start in civil life.

I concur in the recommendation of the Adjutant-General that the privilege of this statute should be extended to officers. They are subject to very much the same conditions, preventing them from readily caring for or investing the small savings which the practice of economy may reserve from their salaries, and the natural tendency of such conditions is to prevent their economizing. When an officer has a natural tendency to economy and accumulation he finds himself confronted by a long-established policy of the Department, which discourages any participation in business enterprises by the officers of the Army, and which seems to be wise. If officers invest money they naturally put it into enterprises in the neighborhood of their stations, and they become involved in business affairs which are liable to develop interests inconsistent with their official duties.

The conditions of military life are such that officers of the Army have not the training or the knowledge of business affairs to make them, as a rule, successful in their investments. Many most distressing cases of demoralization of officers of good natural parts, and originally of bright promise, have come from their becoming involved in debt through ill-advised business investments which have been unsuccessful, or which have led to extravagance of living by reason of sanguine expectations of profit never realized. It is of the highest importance that the officers of the Army should live within their means, and whatever measures encourage economy tend toward that end, and promote good habits, attention to duty, efficiency, and good administration of military affairs.

The frequent changes which are necessary for the officers of our small Army and the very great distances which they are obliged to travel, often make an order for a change of station work really great hardship by requiring the officer to pay the cost of transporting his furniture above the limit allowed by law as a charge upon the Treasury. The deterioration of the furniture by frequent removals is also great. I think it desirable that the same course should be adopted for officers of the Army which is followed by the Navy as to its officers who occupy public quarters on shore, and that the Government should supply the heavy furniture for officers' quarters.

The Government, buying the furniture in large quantities, could get it at a very much smaller first cost than the officers can; the furniture, remaining permanently in the same quarters, would depreciate much less rapidly than when it is moved about from post to post, and

the cost of transportation, which is now paid partly by the Government and partly by the officer, would be altogether saved. The saving to the officer would undoubtedly make it practicable for him to pay a moderate rental to the Government for the use of the furniture sufficient to constitute a renewal fund and perhaps to reimburse the original expense. I annex hereto, marked "Appendix M," a memorandum addressed to the Quartermaster-General on the 16th of October, 1902, calling for information on this subject, and a memorandum by that officer in reply, dated November 5, 1902. I hope that the subject will receive the favorable consideration of Congress.

THE CANTEEN.

Referring to the operation of section 38 of the act of February 2, 1901, which prohibits the sale of beer and light wines in post exchanges, I said in my last report that a great body of reports had been received which indicated that the effect of the law was unfortunate, but that I thought a sufficient time had not elapsed to give the law a fair trial, and that the observation and report of its working would be continued during the ensuing year.

A great number of additional reports have now been received, and they confirm the impression produced by the earlier reports. I am convinced that the general effect of prohibiting the use of beer and light wines within the limited area of the army post is to lead the enlisted men to go out of the post, to frequent vile resorts which cluster in the neighborhood, to drink bad whisky to excess, and to associate intimately with abandoned men and more abandoned women; and that the operation of the law is to increase drunkenness, disease of the most loathsome kind, insubordination and desertion, and moral and physical degeneration.

These reports are ready to be sent to Congress whenever that body desires to consider the subject.

ALASKAN TELEGRAPH SYSTEM.

The Signal Corps has exhibited great activity, under circumstances of great difficulty, in pressing forward the construction of the system of military telegraph lines in the Territory of Alaska, under the act of May 26, 1900. They have built and put in working order in Alaska, within a period of twenty-four months, 1,121 miles of land lines and submarine cables. When the exceedingly difficult physical conditions within the Territory are considered, and the labor and hardships which the officers and men of the corps encountered, are appreciated, the construction of this telegraph system must be regarded as an additional illustration of the tireless energy and indomitable spirit which characterize this branch of our service. Efforts were

made to introduce wireless telegraphy in Alaska, and a contract was made for the establishment of communication according to the Fessenden system between Nome and St. Michael. The work was to be completed by the 1st of October, 1902, but the contract was not performed.

I wish to call especial attention to the importance of a cable between the northwestern coast of the State of Washington and the southern point of our Alaskan territory, so as to connect the telegraph system of the United States with the telegraph system in Alaska. The Government of the United States is maintaining troops in Alaska at various points. It is responsible for the maintenance of order. Disturbances are always liable to occur in new mining camps, and there is always a possibility of their occurring along a frontier line. Our only present means of communicating by telegraph with our officers, or with anyone concerned in the government of Alaska, is over the Canadian land lines.

MILITARY REPRESENTATIVES IN EUROPE.

In June last the War Department received, through the State Department, from His Majesty the German Emperor, a courteous invitation for Maj. Gen. Henry C. Corbin, Maj. Gen. S. B. M. Young, and Brig. Gen. Leonard Wood to attend the autumn maneuvers of the Prussian army as the guests of the German Emperor. The invitation was accepted, and the officers named were directed to attend the maneuvers. Acknowledgment is due for the great courtesy which was shown them by the Emperor, and by all officers of the German army whom they met. Similar acknowledgments are due to the Governments of France and Great Britain, and to the officers of their armies, for many courtesies shown to American officers and many facilities afforded to them for acquiring useful information upon military subjects.

GENERAL WAR DEPARTMENT SERVICE.

The year has been characterized generally by faithful and painstaking work by the different bureaus of the War Department and by the civilian force of the Department. The Quartermaster's, Subsistence, and Pay departments have dealt ably and successfully with the difficulties presented by rapidly changing conditions and constant movement of troops. The transportation of the Army has been accomplished with promptness and comfort, and the clothing and food supplied have been of the best quality.

I wish especially to make acknowledgment of the devoted and able services of the Assistant Secretary of War, Col. William Cary Sanger, and of the Chief Clerk of the Department, Mr. John C. Scofield.

EXPENDITURES, APPROPRIATIONS, AND ESTIMATES.

The expenditures for the fiscal year ended June 30, 1902, the estimates of appropriations for the fiscal year ending June 30, 1903, the appropriations for the present fiscal year, and the estimates of appropriations required for the fiscal year ending June 30, 1904, are as follows:

General object.	Expenditures for the fiscal year ended June 30, 1902.	Estimates for the fiscal year ending June 30, 1903.	Appropriations for the fiscal year ending June 30, 1903.	Estimates for the fiscal year ending June 30, 1904.
CIVIL ESTABLISHMENT.				
Salaries, regular force	$1,300,949.57	$1,638,266.00	$1,310,196.00	$1,859,126.00
Salaries, temporary force	559,138.08	237,307.26	596,400.00	.....
Stationery, War Department	24,458.13	32,000.00	30,000.00	25,000.00
Contingent expenses, War Department	43,304.19	57,000.00	55,000.00	50,000.00
Rent, War Department	14,550.09	15,700.00	15,300.00	15,600.00
Postage, War Department	1,000.00	.....	.....	500.00
Salaries and contingent expenses under Superintendent Public Buildings and Grounds	66,208.56	67,220.00	67,320.00	70,670.00
Total civil establishment	2,009,608.53	2,047,493.26	2,074,216.00	2,020,896.00
MILITARY ESTABLISHMENT.				
All contingent expenses	26,209.17	92,640.00	92,140.00	45,500.00
Pay, etc., of the Army	36,137,867.90	33,725,225.78	32,700,796.41	29,672,364.87
Subsistence of the Army	6,421,391.73	11,934,916.25	11,000,000.00	7,338,955.80
Signal service of the Army	215,379.06	399,200.00	399,200.00	549,000.00
Military telegraph and cable lines, Alaska	106,492.80	.....	.....	.....
United States service schools	14,997.08	25,000.00	25,000.00	25,000.00
School of Submarine Defense, Fort Totten, N. Y	.....	.....	16,500.00	18,000.00
Army War College	.....	.....	.....	15,000.00
Engineer School, Washington, D. C	.....	45,000.00	45,000.00	25,000.00
Regular supplies, Quartermaster's Department	5,490,988.14	6,000,000.00	5,500,000.00	5,500,000.00
Incidental expenses, Quartermaster's Department	1,794,548.70	2,300,000.00	2,300,000.00	2,300,000.00
Barracks and quarters	3,006,524.04	3,000,000.00	3,350,000.00	4,750,000.00
Barracks and quarters, Philippine Islands	.....	.....	1,500,000.00	500,000.00
Army transportation	16,742,809.27	30,000,000.00	25,000,000.00	16,000,000.00
Cavalry and artillery horses	390,563.69	750,000.00	600,000.00	450,000.00
Clothing, etc	3,192,176.84	5,000,000.00	4,000,000.00	4,750,000.00
Construction and repair of hospitals	181,542.13	150,000.00	150,000.00	435,000.00
Quarters for hospital stewards	9,775.94	15,000.00	15,000.00	15,000.00
Shooting galleries and ranges	19,377.46	15,000.00	15,000.00	35,000.00
Military post exchanges	.....	.....	500,000.00	.....
Army general hospitals	.....	200,000.00	200,000.00	.....
Medical and Hospital Department	595,968.20	1,000,000.00	.....	.....
Army Medical Museum and Library	18,884.41	15,000.00	15,000.00	15,000.00
Engineer depot	.....	13,000.00	13,000.00	16,500.00
Engineer depot, Willets Point, N. Y	12,985.59	.....	.....	.....
Buildings, Engineer School, Washington, D. C	.....	.....	.....	360,000.00
Engineer equipment of troops	16,440.65	25,000.00	25,000.00	25,000.00
Civilian assistants to engineer officers	10,449.57	25,000.00	25,000.00	25,000.00
Ordnance service	291,390.78	300,000.00	300,000.00	300,000.00

General object.	Expenditures for the fiscal year ended June 30, 1902.	Estimates for the fiscal year ending June 30, 1903.	Appropriations for the fiscal year ending June 30, 1903.	Estimates for the fiscal year ending June 30, 1904.
MILITARY ESTABLISHMENT—continued.				
Ordnance, ordnance stores and supplies	$2,354,610.80	$2,125,000.00	$2,225,000.00	$2,480,691.00
Manufacture of arms	849,463.53	1,100,000.00	1,700,000.00	1,700,000.00
Ammunition for morning and evening gun	24,711.74	25,000.00	25,000.00	25,000.00
Artillery targets	9,498.84	10,000.00	10,000.00	40,000.00
Emergency fund, War Department	42,362.20	1,000,000.00	.....	.....
Military Academy	524,816.64	559,454.42	536,998.42	575,503.62
Total military establishment	78,442,226.81	99,849,436.45	92,283,634.83	77,986,515.29
PUBLIC WORKS.				
Arsenals, etc	750,226.93	622,250.00	345,700.00	884,436.00
Gun and mortar batteries	1,974,307.03	4,150,000.00	2,325,000.00	4,325,000.00
Torpedoes for harbor defense	27,133.20	125,000.00	50,000.00	430,334.00
Sites for fortifications and seacoast defenses	128,947.58	2,000,000.00	200,000.00	2,000,000.00
Preservation and repair, and plans for fortifications	95,269.80	305,000.00	305,000.00	305,000.00
Sea walls and embankments	65,400.00	150,000.00	100,000.00	160,000.00
Armament of fortifications	3,732,403.71	8,000,582.60	3,413,255.00	6,827,010.00
Board of Ordnance and Fortification	129,689.29	200,000.00	100,000.00	200,000.00
Other fortifications appropriations	579,731.71	1,468,726.00	789,200.00	757,076.00
Buildings and grounds in Washington, etc	377,804.78	163,309.30	770,791.00	154,650.00
Erection of monuments, etc	6,016.35	.....	180,500.00	.....
Buildings and grounds, Military Academy	125,844.45	339,358.00	2,090,326.00	121,430.20
Military posts	1,364,005.12	3,262,480.00	2,832,730.00	5,014,737.50
National military parks	288,648.42	515,000.00	515,000.00	425,600.00
River and harbor improvements under the continuing-contract system	13,802,860.15	5,489,377.50	12,306,360.00	16,570,339.33
River and harbor improvements under the Mississippi River Commission		2,695,000.00	2,200,000.00	2,000,000.00
River and harbor improvements under the Missouri River Commission		315,200.00	.....	.....
Improving rivers and harbors under the Chief of Engineers		20,113,100.00	18,058,839.94	.....
Total public works	23,448,288.52	49,914,383.40	46,582,701.94	40,175,613.03
MISCELLANEOUS.				
National cemeteries, etc	229,419.08	313,814.05	298,814.00	265,380.00
Surveys, maps, etc	110,870.38	205,100.00	155,100.00	180,100.00
Artificial limbs and appliances	121,225.69	516,000.00	516,000.00	154,000.00
California Débris Commission	10,535.89	15,000.00	15,000.00	15,000.00
Bringing home the remains of officers, soldiers, and civil employees who die abroad, and soldiers who die on transports	109,817.51	90,000.00	90,000.00	45,000.00
Prevention of deposits, harbor of New York	72,782.01	70,260.00	70,260.00	120,260.00
National Home for Disabled Volunteer Soldiers	3,236,434.40	3,434,294.00	3,894,669.00	4,039,458.00
Aid to State and Territorial homes	1,004,724.80	950,000.00	950,000.00	950,000.00
Miscellaneous items	2,500.00	4,055.10	7,000.00	37,213.10
Total miscellaneous	4,898,309.76	5,598,523.15	5,996,843.00	5,806,411.10
Grand total	108,798,433.62	157,409,836.26	146,937,395.77	125,989,435.42

RECAPITULATION.

General object.	Expenditures for the fiscal year ended June 30, 1902.	Estimates for the fiscal year ending June 30, 1903.	Appropriations for the fiscal year ending June 30, 1903.	Estimates for the fiscal year ending June 30, 1904.
Civil establishment	$2,009,608.53	$2,047,493.26	$2,074,216.00	$2,020,896.00
Military establishment (support of the Army and Military Academy)	78,442,226.81	99,849,436.45	92,283,634.83	77,986,515.29
Public works (including fortifications and river and harbor improvements)	23,448,288.52	49,914,383.40	46,582,701.94	40,175,613.03
Miscellaneous	4,898,309.76	5,598,523.15	5,996,843.00	5,806,411.10
Grand total	108,798,433.62	157,409,836.26	146,937,395.77	125,989,435.42

General object.	Net increase of estimates for 1904 as compared with estimates for 1903.	Net decrease of estimates for 1904 as compared with estimates for 1903.	Net decrease of estimates for 1904 as compared with appropriations for 1903.
Civil establishment		$26,597.26	$53,320.00
Military establishment (support of the Army and Military Academy)		21,862,921.16	14,297,119.54
Public works (including fortifications and river and harbor improvements)		9,738,770.37	6,407,088.91
Miscellaneous	$207,887.95		190,431.90
Grand total	207,887.95	31,628,288.79	20,947,960.35
Less increase		207,887.95	
Net decrease of estimates for 1904 as compared with estimates for 1903		31,420,400.84	

A comparative statement of the last four estimates submitted to Congress for the support of the military establishment proper, and of the appropriations and expenditures thereon, is as follows:

	Estimates.	Appropriations.	Expenditures.
Submitted in December, 1899, for the fiscal year ending June 30, 1901	$128,170,583.54	$114,586,229.22	$105,702,101.02
Submitted in December, 1900, for the fiscal year ending June 30, 1902	113,568,319.39	116,249,552.78	78,442,226.81
Submitted in December, 1901, for the fiscal year ending June 30, 1903	99,849,436.45	92,283,634.83	
Submitted in December, 1902, for the fiscal year ending June 30, 1904	77,986,515.29		

It will be observed that estimates have progressively decreased. The estimate for 1901 was, in round numbers, $128,000,000; for 1902, $113,000,000; for 1903, $99,000,000; for 1904, $77,000,000. Upon the estimate for $128,000,000 for 1901, the appropriations were $114,000,000 and the expenditures $105,000,000; upon the estimate for $113,000,000 for 1902, the appropriations were $116,000,000 and the expenditures $78,000,000.

The estimates presented this year for the support of the military establishment proper, involving chiefly things consumed during the year, are $14,000,000 less than last year's appropriations and

$21,000,000 less than last year's estimates. On the other hand, we are asking Congress for considerable increases in appropriations for investment in permanent plant, such as sites for fortifications and seacoast defenses, gun and mortar batteries, armament of fortifications, arsenals, and military posts.

Expenditures from indefinite and permanent annual appropriations and appropriations for war claims and relief acts are not included in the above statement, but are shown in Appendix N to this report, which is a complete and detailed statement of all appropriations under the direction of the War Department for the fiscal year ended June 30, 1902, showing the balances from appropriations of the preceding fiscal year, the amounts appropriated under each title of appropriation, the amounts drawn from the Treasury upon requisition, and the unexpended balances June 30, 1902.

There were no expenditures from the appropriation for national defense (War) during the fiscal year ended June 30, 1902, but repayments to this fund were made from several bureaus by covering into the Treasury the following amounts:

Ordnance Department	$346,805.61
Quartermaster's Department	464.76
Paymaster's Department	473.01
Total	347,743.38

and the present condition of this appropriation is shown in the following tabulated statement:

Condition of the special emergency appropriation for national defense (war) under the War Department.

Allotments.	Amounts allotted to June 30, 1899.	Balances June 30, 1902.
Office of Secretary of War	$225,000.00	$931.03
Ordnance Department	9,081,496.86	1,160,406.36
Engineer Department	5,585,000.00	12,393.07
Quartermaster's Department	1,989,230.82	2,029.34
Medical Department	1,520,000.00	46,028.31
Pay Department	255,000.00	2,399.26
Signal Service	238,900.00	.....
Light-House Board	75,000.00	.....
Total	18,969,627.68	1,224,187.37

As stated in the last annual report, it had been held by the Comptroller of the Treasury that the appropriation for national defense lapsed on June 30, 1901, by reason of the limitation of the acts of March 9, 1898 (30 Stats., 274), and June 5, 1899 (30 Stats., 781), and that consequently the balances remaining to the credit of the several bureaus of the War Department were no longer available for expenditure.

Subsequent to this decision of the Comptroller, a provision was

inserted in the urgent deficiency act approved February 14, 1902, with reference to the naval establishment, reappropriating the unexpended balance of the national defense appropriation, and making it "available for expenditure in fulfillment of contracts heretofore made and properly chargeable to said appropriation." Under date of April 25, 1902, the Comptroller decided that balances of this appropriation remaining to the credit of the several bureaus of the War Department are available for expenditure in fulfillment of contracts made by the War Department before June 30, 1901, and properly chargeable to said appropriation.

CIVIL GOVERNMENT IN THE PHILIPPINES.

The Philippine government act of July 1, 1902, adopts and continues with enlarged powers the system of government built up under the President's instructions of April 7, 1900. The growth and character of that government were described in my last annual report. I transmit herewith all the statutes passed by the Philippine Commission from and including act No. 264, passed October 14, 1901, to and including act No. 424, passed July 1, 1902. These, together with the acts previously transmitted to Congress, constitute the entire body of legislation by the Philippine Commission prior to the passage of the Philippine government act by Congress.

The enacting clause of all these laws is "*By authority of the President of the United States, be it enacted by the United States Philippine Commission.*" Their authority as law rests: First, upon the power vested in the Commission by the President in the exercise of his war powers under the Constitution, in the instructions of April 7, 1900. Second, upon the sanction given to those instructions in that part of the act of March 2, 1901, commonly known as the "Spooner amendment," which provided:

> All military, civil and judicial powers necessary to govern the Philippine Islands, acquired from Spain by the treaties concluded at Paris on the tenth day of December, 1898, and at Washington on the seventh day of November, 1900, shall, until otherwise provided by Congress, be vested in such person and persons and shall be exercised in such manner as the President of the United States shall direct for the establishment of civil government and for maintaining and protecting the inhabitants of said islands in the free enjoyment of their liberty, property and religion.

And Third, upon the provision of the Philippine government act of July 1, 1902.

> That the action of the President of the United States in creating the Philippine Commission and authorizing said Commission to exercise the powers of government to the extent and in the manner and form and subject to the regulation and control set forth in the instructions of the President to the Philippine Commission, dated April 7, 1900, * * * is hereby approved, ratified, and confirmed.

The statutes passed by the Philippine Commission after the 1st of July, 1902, will rest upon the authority conferred beforehand upon

the Commission by Congress in that act, and the enacting clause will be: "*By authority of the United States, be it enacted by the Philippine Commission.*"

A report by the Philippine Commission has been mailed at Manila and is in transit to Washington. Upon its arrival it will be transmitted to Congress and with it will be sent copies of all acts passed by the Commission since the 1st of July, 1902.

Sections 63, 64 and 65 of the act of July 1, 1902, authorize the Commission to acquire title to lands of religious orders held in such large tracts as to injuriously affect the peace and welfare of the people of the islands, to issue bonds in payment for such land, to sell the land, with a preference to actual settlers and occupants, and to apply the proceeds to paying the principal and interest of the bonds. After the bill containing these provisions had been reported favorably by the committees of both Houses, but before the passage of the bill, Governor Taft being about to return from Washington to his post at Manila via the Suez Canal, was directed to stop at Rome for the purpose stated in the following extract from his instructions:

> In view, therefore, of the critical situation of this subject in the Philippines, and of the apparent impossibility of disposing of the matter there by negotiation with the friars themselves, the President does not feel at liberty to lose the opportunity for effective action afforded by your presence in the West. He wishes you to take the subject up tentatively with the ecclesiastical superiors who must ultimately determine the friars' course of conduct, and endeavor to reach at least a basis of negotiation along lines which will be satisfactory to them and to the Philippine government, accompanied by a full understanding on both sides of the facts and of the views and purposes of the parties to the negotiation, so that when Congress shall have acted the business may proceed to a conclusion without delay.

These instructions were complied with and resulted in a very full and satisfactory understanding as to the methods to be adopted for disposing of the various questions arising out of the separation of church and state in the Philippine Islands required by the change of sovereignty. The papers establishing this basis of an understanding are annexed hereto, marked "Appendix O." The negotiations are now proceeding at Manila between Governor Taft and Monsignor Guidi, the Papal delegate to the Philippines, in accordance with the understanding reached at Rome. I have no doubt that, although many of the questions involved are delicate and difficult, just conclusions will be reached, satisfactory to both sides.

The trade of the islands has been greatly hampered during the past year by the ravages of rinderpest, causing a mortality in some provinces of over 90 per cent among the carabao, and a consequent shortage of food crops. Business in many sections has been seriously interrupted by an epidemic of cholera, yet the imports for the fiscal year 1902 were greater than in any previous year in the history of

the archipelago, and exports were exceeded in but two previous years, 1870 and 1889. The total merchandise, exclusive of gold and silver and Government supplies, imported during the fiscal year 1902 was $32,141,842, as against $30,279,406 for the fiscal year 1901 and $20,601,436 for the fiscal year 1900, and the total value of merchandise exported during the fiscal year 1902 was $23,927,679, as against $23,214,948 for the fiscal year 1901 and $19,751,068 for the fiscal year 1900, an increase of 6 per cent in the value of imports for the fiscal year 1902 over the fiscal year 1901 and of 56 per cent over the fiscal year 1900, and an increase in the value of exports for the fiscal year 1902 over the fiscal year 1901 of 3 per cent and over the fiscal year 1900 of 21 per cent.

The imports for the fiscal year 1902 came from the following countries:

United States	$4,035,243	China	$4,300,959
United Kingdom	5,523,161	Hongkong	1,820,109
Germany	2,356,548	British East Indies	2,995,192
France	1,524,523	French East Indies	3,244,329
Spain	2,388,542	Other countries	3,953,236

The exports for the same period went to the following countries:

United States	$7,691,743	Hongkong	$3,183,482
United Kingdom	8,282,979	Japan	925,767
Germany	75,626	British East Indies	670,819
France	955,828	Australasia	437,840
Spain	868,528	Other countries	372,121
China	462,946		

The imports from the United States amounted to $4,035,243 in 1902 as against $2,855,685 in 1901 and $1,657,701 in 1900, or an increase for the past year over 1900 of 143 per cent. The value of merchandise exported to this country in 1902 was $7,691,743 as against $2,572,021 in 1901 and $3,522,160 in 1900, showing an increase in favor of the latest period over 1900 of 118 per cent.

The United States shows greater gains of imports for the fiscal year 1902 than any other country, except the French East Indies, which shows a great increase in the quantity of rice exported to the islands to make up for deficient crops. In exports the United States gained more than any other country.

The showing made by the United States on the basis of direct shipments to and from the islands discloses a marked increase during the past few years; yet it does not take into account purchases made in this country entered at the Philippine customs-houses free of duty for use of the United States military departments or the insular government or its subordinate branches. In these figures also this country is deprived of the proper credit for its imports into the islands by shipments passing through Hongkong and eventually reported as

originating at that point. Although this applies also to European countries to some extent, it has been found that only a small part of their export credits is affected, for the reason that nearly all their shipments come direct via Singapore; and the transshipment at that port and at Hongkong and Saigon are rarely attended by the issue of new shipping documents, under which the port of transshipment can be taken as the port of origin.

As to the Philippine export trade to the United States, in which this country has trebled its figures during the last two years, the results stated represent more nearly the proper credit, but there are numerous instances of shipments of hemp in large quantities, intended for the United States, to Europe and Hongkong under documents in which these countries are given as the ports of final destination. This will appear from the fact that approximately $7,500,000 worth of hemp was exported from the Philippines to the United Kingdom during the year 1902, while during the same period the importations of this fiber into the United States from the United Kingdom amounted to nearly $4,250,000, presumably included in indirect shipments, credit for which should be given to this country. If credit is given for these importations the United States is placed far in advance as the leading market for Philippine products at the present time.

The second section of the act of March 8, 1902, approving the Philippine tariff law, provides that—

> All articles, the growth and product of the Philippine Islands, admitted into the ports of the United States free of duty under the provisions of this act, and coming directly from said islands to the United States for use and consumption therein, shall be hereafter exempt from any export duties imposed in the Philippine Islands.

Under this provision it has been ruled that, to be entitled to the benefit of this exemption from export duty in the Philippines, articles must come from the Philippines to the United States in the same bottom, and that articles exported from Manila to Hongkong or London and there reshipped to the United States, even though under a through bill of lading, are not entitled to the statutory benefit of exemption from export tax. Under this provision it is probable that the next hemp crop, so far as it is required for consumption in the United States, will come direct to our ports instead of going by Hongkong or London. In that case the business will be open for American commercial lines, if they see fit to engage in it.

The total importations received from date of American occupation to and including June 30, 1902, amounted to $96,135,694, or, reckoning complete yearly periods covered by the last three fiscal years, an average annual import trade of more than twenty-seven and a half million is shown to have been maintained; and the total duty collected during these years approximated twenty-two and a half millions.

The value of merchandise exported during the same period was $79,260,607, the duty collected amounting to nearly $3,000,000.

Annexed hereto will be found a tabulated statement in comparative form, showing the Philippine commerce with the United States and leading countries during three calendar years of American occupation ended December 31, 1901, marked "Appendix P."

Immigrants to the number of 30,094 arrived in the Philippine Islands during the fiscal year 1902 as against 17,108 in the fiscal year 1901. Of this number 12,751 (including 10,101 Chinese) had been in the islands before. Among the 17,343 who came for the first time there were 15,312, or 88 per cent, Americans, 368 Chinese, 451 Japanese, 222 English, 358 Spaniards, 129 East Indians, and 503 of other nationalities. There were 2,497 females and 928 children under 14 years of age. With the exception of 8,349 Chinese but 3 per cent of the immigrants were illiterates. Among the Americans there were 176 merchant dealers and grocers, 790 teachers, 122 clerks and accountants. The greater number of Americans are, however, not described by occupation. More than three-fourths of the Chinese were laborers, and more than half the remainder merchants.

Annexed hereto, marked "Appendix Q," is a statement of revenues and expenditures in the Philippine Archipelago from the date of American occupation to the end of the fiscal year 1902, which coincides with the end of the government under the authority of the President and the beginning of government under the direct authority of Congress. The total revenues have amounted to $33,589,819.05 and the total expenditures to $23,253,573.13, American money.

The relative income and expenditure by fiscal years has been as follows:

	Income.	Expenditure.
1899	$3,508,682.83	$2,376,008.62
1900	6,763,527.73	4,758,677.75
1901	10,686,188.97	6,073,766.44
1902	12,631,419.52	10,045,120.32

The surplus of income over expenditure has in a great measure been allotted to the payment of various contracts for public improvements and public benefit, so that the real surplus of free cash in the Treasury is comparatively small.

I shall defer comment and recommendation generally upon Philippine affairs until I transmit the report of the Commission, now on the way to this country. I realize that it is hardly to be expected that Congress shall devote much time to legislation for the Philippines during the approaching short session, especially in view of the great amount of time which they devoted to the subject in the last session

and the scope and value of the laws which they then considered and passed.

I do not wish to delay, however, in asking the attention of Congress to two subjects upon which, I think, if the conditions and needs of the islands could be fully understood, there would be but little controversy, and upon which very simple enactments would be of immense value to the people of the islands, whose welfare the Government of the United States is bound to promote. I earnestly urge, first, that the duties levied in the United States upon products of the Philippine Archipelago imported therefrom be reduced to 25 per cent of the Dingley tariff rates; second, that the government of the island be permitted to establish the gold standard for its currency, and to take such measures as it finds to be practicable and prudent to keep the silver coinage which it is authorized to issue at parity with gold, without in any way committing the United States to responsibility therefor.

I shall not now undertake, nor is it the proper office of such a report as this, to argue the economic questions which may be raised by the consideration of these recommendations. The views upon which they are based have been presented in my former reports and in the reports of the Philippine Commission. The reason for presenting them now is that the ills which have recently befallen the people of the islands call urgently for active and immediate measures of relief. The people of a country just emerging from nearly six years of devastating warfare, during which productive industry was interrupted, vast amounts of property were destroyed, the bonds of social order were broken, habits of peaceful industry were lost, and at the close of which a great residuum of disorderly men were left leading a life of brigandage and robbery, had a sufficiently difficult task before them to restore order and prosperity. In addition to this, however, the people of the Philippine Islands have within the past year been visited by great misfortunes.

The rinderpest has destroyed about 90 per cent of all their carabaos, leaving them without draft animals to till their land and aid in the ordinary work of farm and village life. Carabaos have increased in price from $20 to $200 Mexican. The Eastern disease known as "surra" has killed and is killing the native and American horses, further crippling transportation. The rice crop has been reduced to 25 per cent of the ordinary crop. Last year in the Visayan Islands and this year in Luzon a plague of locusts has come upon the land, destroying much of the remaining 25 per cent of the rice crop. A drought in China and the fall in the price of silver have raised the price of rice from $4 to $7 a picul. The Commission has been obliged to go out of the islands and use insular funds to buy over 40,000,000 pounds of rice to save the people from perishing by famine. Cholera has raged and is raging throughout the islands. The ignorance of the

people and their unwillingness to submit to sanitary regulations have made it almost impossible to check the ravages of the disease, which, it is estimated, will claim not less than 100,000 victims. The decline in the price of silver has carried Mexican dollars down from a ratio of two to one in gold to a ratio of over two and one-half to one, and this has borne heavily on the commercial interests and on the wage earners.

The insular government has in ten months lost over $1,000,000 gold by the decline in silver because it was operating on a silver basis, and this has changed the surplus of revenues into a deficit at the very time when the other causes mentioned have caused an extraordinary demand for the use of the revenues for the relief of the people. Agriculture is prostrated. Commerce is hampered and discouraged. All the political parties in the Philippines urgently demand a change of the present currency standard. Some relief would be afforded by opening a profitable market in the United States to the products of the islands. Still greater relief would be afforded by delivering the business of the islands from the disastrous effects of the decline in the price of silver and the fluctuations in exchange, and putting it upon the substantial basis of the gold standard currency which exists in the United States, where we wish them to do their business, which exists on the continent of Europe and in India and Japan, and the adoption of which is now under consideration in the Straits Settlements.

Realizing the difficulty and importance of many of the questions with which we were about to be confronted in our undertaking to govern or supervise the government of the Philippines, and at about the time of sending Mr. Charles A. Conant to study the banking and currency questions in the Philippines, the War Department sent Prof. Jeremiah W. Jenks, of Cornell University, as special commissioner to study and report on the systems of currency, labor, and internal taxation of Burma, the Straits Settlements, the Federated Malay States, and Java. His very able and painstaking report upon all these subjects was received in September, 1902, and is transmitted herewith. Without any conference between himself and Mr. Conant, starting with views in favor of the silver standard and proceeding upon the basis of an entirely independent investigation, viewing broadly the entire conditions in the Orient, Professor Jenks has come to substantially the same conclusion, that the true solution of the monetary difficulties in the Philippines is to be found in the adoption of the gold standard. I recommend this report to careful consideration, and urge that a measure based upon the views which he thus reenforces, should be adopted in performance of the peremptory duty resting upon the Government of the United States to act and not remain indifferent in regard to the evils which now press so heavily upon the people of the Philippine Islands.

I annex hereto, marked "Appendix R," a statement showing the commercial relations of Cuba with the United States and other countries during the entire period of American occupation.

I submit herewith the annual reports of the heads of the bureaus of the War Department and of the Lieutenant-General Commanding the Army, to which are appended the reports to him by division and department commanders, including separate reports of military operations in the Philippine Islands.

The final report of Brig. Gen. Leonard Wood as military governor of Cuba, when received, will be submitted as a supplemental report.

The reports of the Board of Ordnance and Fortification; the commissioners of national military parks; the Board of Visitors to the United States Military Academy at West Point; the Superintendent of the United States Military Academy; the Board of Commissioners of the Soldiers' Home, District of Columbia; of inspection of the Soldiers' Home, District of Columbia, and inspection of the National Home for Disabled Volunteer Soldiers, are also submitted.

ELIHU ROOT,
Secretary of War.

APPENDIX A.

BEING THE DOCUMENTARY HISTORY OF THE INAUGURATION OF THE CUBAN GOVERNMENT.

MARCH 24, 1902.

SIR: You are authorized to provide for the inauguration, on the 20th of May next, of the government elected by the people of Cuba; and upon the establishment of said government to leave the government and control of the island of Cuba to its people, pursuant to the provisions of the act of Congress entitled "An act making appropriation for the Army for the fiscal year ending June 30, 1902," approved March 2, 1901.

Upon the transfer of government and control to the President and Congress so elected, you will advise them that such transfer is upon the express understanding and condition that the new government does thereupon, and by the acceptance thereof, pursuant to the provisions of the appendix to the constitution of Cuba, adopted by the constitutional convention on the 12th of June, 1901, assume and undertake all and several the obligations assumed by the United States with respect to Cuba by the treaty between the United States of America and Her Majesty the Queen Regent of Spain, signed at Paris on the 10th day of December, 1898. It is the purpose of the United States Government, forthwith upon the inauguration of the new government of Cuba, to terminate the occupancy of the island by the United States and to withdraw from that island the military forces now in occupancy thereof; but for the preservation and care of the coast defenses of the island, and to avoid leaving the island entirely defenseless against external attack, you may leave in the coast fortifications such small number of artillerymen as may be necessary, for such reasonable time, as may be required to enable the new government to organize and substitute therefor an adequate military force of its own; by which time it is anticipated that the naval stations referred to in the statute and in the appendix to the constitution above cited, will have been agreed upon, and the said artillerymen may be transferred thereto.

You will convene the Congress elected by the people of Cuba in joint session at such reasonable time before the 20th of May as shall

be necessary therefor, for the purpose of performing the duties of counting and rectifying the electoral vote for President and Vice-President under the fifty-eighth article of the Cuban constitution. At the same time you will publish and certify to the people of Cuba the instrument adopted as the constitution of Cuba by the constitutional convention on the 21st day of February, 1901, together with the appendix added thereto, and forming a part thereof, adopted by the said convention on the 12th day of June, 1901. It is the understanding of the Government of the United States that the government of the island will pass to the new President and Congress of Cuba as a going concern; all the laws promulgated by the government of occupation continuing in force and effect, and all the judicial and subordinate executive and administrative officers continuing in the lawful discharge of their present functions until changed by the constitutional officers of the new government. At the same moment the responsibility of the United States for the collection and expenditure of revenues, and for the proper performance of duty by the officers and employees of the insular government, will end, and the responsibility of the new government of Cuba therefor will commence.

In order to avoid any embarrassment to the new President which might arise from his assuming executive responsibility with subordinates whom he does not know, or in whom he has not confidence, and to avoid any occasion for sweeping changes in the civil-service personnel immediately after the inauguration of the new government, approval is given to the course which you have already proposed of consulting the President-elect, and substituting, before the 20th of May, wherever he shall so desire, for the persons now holding official positions, such persons as he may designate. This method will make it necessary that the new President and yourself should appoint representatives to count and certify the cash and cash balances, and the securities for deposits, transferred to the new government. The consent of the owner of the securities for deposits to the transfer thereof you will of course obtain.

The vouchers and accounts in the office of the auditor and elsewhere relating to the receipt and disbursement of moneys during the government of occupation must necessarily remain within the control, and available for the use, of this department. Access to these papers will, however, undoubtedly be important to the officers of the new government in the conduct of their business subsequent to the 20th of May. You will accordingly appoint an agent to take possession of these papers, and retain them at such place in the island of Cuba as may be agreed upon with the new government, until they can be removed to the United States without detriment to the current business of the new government.

I desire that you communicate the contents of this letter to Mr. Palma, the President-elect, and ascertain whether the course above described accords with his views and wishes.

Very respectfully,

ELIHU ROOT, *Secretary of War.*

Brig. Gen. LEONARD WOOD,
Military Governor of Cuba, Havana, Cuba.

[First indorsement.]

The proposals included in this letter meet my personal approval.
Washington, 25th, 1902.

T. ESTRADA PALMA.

[Second indorsement.]

WASHINGTON, D. C., *March 25, 1902.*

Respectfully returned to the honorable the Secretary of War.

I have the honor to inform you that I have complied with the instructions in the last paragraph of the within letter, which I have the honor to return to you with the indorsement of Señor T. Estrada Palma, president-elect of Cuba. Señor Palma has also placed his signature on each page of the letter.

LEONARD WOOD,
Brigadier-General, U. S. A., Military Governor of Cuba.

WAR DEPARTMENT,
Washington, March 27, 1902.

SIR: In the instructions already communicated to you as to the withdrawal of the army from Cuba there is a provision that you may leave a small force of artillery troops for certain purposes therein specified. The retention of these troops will require that special arrangements be made for the maintenance of discipline among the forces so remaining with a view to limit their action to the ends proposed. From the evacuation provided for in the instructions already communicated exception will, therefore, be made of the modern fortifications and of the barracks, quarters, buildings and grounds appurtenant thereto, constituting a part of the seacoast defenses of the ports of Habana, Cienfuegos, and Santiago, which will continue to be garrisoned by the troops of the United States until a date to be hereafter agreed upon by the respective Governments of the United States and of Cuba.

The posts to be thus provisionally garrisoned by the military forces of the United States will be designated by you, and the boundaries of the tracts constituting the reservations pertaining to the same will be described, by metes and bounds, and will also be shown on maps and plans to be furnished by you to the Government of Cuba; and the

lines of demarcation so described and shown will mark and define the limits of the jurisdiction of the Government of Cuba and of the military jurisdiction of the United States Government over the forces in its military service. The troops thus remaining as garrisons of the artillery defenses of Havana, Cienfuegos, and Santiago will enjoy all the privileges of exterritoriality to which vessels of war visiting the territorial waters of a friendly power are entitled under the generally accepted rules of international law.

The troops remaining in garrison in the island of Cuba will, on the date of the evacuation, cease to constitute an occupying force and will thereafter occupy a status of exterritoriality to be presently explained. The duties of the senior officer will be restricted to the command of the military forces under his orders, and he will under no circumstances exercise, or attempt to exercise, any authority whatever in the governmental affairs of Cuba; and as to himself and the officers and men under his command will carefully abstain from all interference in local or political affairs. You will ask from the proper governmental authority an assurance that it will refrain from the exercise of jurisdiction over the officers and men composing the garrisons of the defenses hereinbefore described, their armament and equipment, and the public property of the United States which is in their custody and control.

The troops of the United States so remaining in the island of Cuba, and there enjoying the privileges of exterritoriality, are to be under the exclusive military command and control of the senior officer stationed therewith; and you will obtain the necessary assurances that the right of transit of individuals, detachments, or military organizations, to and from the United States and from one post to another in the island shall not be denied, impeded, or interfered with, and the right of the United States Government to inspect and communicate with the garrisons above named and of its subordinate military commanders to communicate with each other and with their military superiors in the United States by mail, telegraph, telephone, or by special messenger, shall be maintained and protected. You will also ask for similar assurances that the several military commands herein provided for shall have the right to procure supplies in the island of Cuba, to receive military stores, and munitions of war from the United States, and to ship stores, military supplies, and public property of all kinds, and the private property and baggage of officers and enlisted men to the United States, or from one point to another in the island of Cuba; that such importations and exports shall be exempt from customs and inspections, from insular taxation, and from municipal impositions of all kinds; and that such stores, supplies, and munitions shall during their transit from point to point in Cuba be entitled to a similar

immunity from local jurisdiction and from seizure by way of execution or otherwise.

The Government of Cuba should also be asked to pledge itself to protect individual officers and enlisted men, or detachments of troops under proper military commands, while on duty outside of the limits of the reservations hereinbefore described. The proper local authorities should similarly be instructed to protect individual officers and enlisted men, who may find themselves without the limits of their respective reservations, while engaged in private business, in making or returning official or personal visits, or while engaged in travel.

You will endeavor to impress upon the commander of the artillery forces constituting the garrisons to be retained in the island the importance of refraining from even the appearance of interference in governmental or political affairs. He will render appropriate military honors to the Cuban flag and to all officers of the Cuban Government who are entitled thereto, and will treat its representatives with whom he may come into personal or official contact with the greatest courtesy and consideration, upon all occasions.

Very respectfully,

ELIHU ROOT,
Secretary of War.

Brig. Gen. LEONARD WOOD,
Military Governor of Cuba, Havana, Cuba.

WAR DEPARTMENT,
Washington, May 3, 1902.

SIR: I inclose herewith four papers marked respectively "A," "B," "C," and "D," for your official action. You will perceive that these are papers which were prepared during my recent visit to Havana, with some slight verbal changes. They have now been submitted to and approved by the President and his Cabinet. The paper marked "A" you will publish in the form of a law or order as soon as practicable after its receipt. The paper marked "B," with the blanks properly filled, you will promulgate by publication in the "Official Gazette" as soon as the Cuban Congress has examined the credentials, counted the votes, reached the decisions, and made the adjournment therein recited. At the same time such further steps as you think necessary should be taken to give the paper full publicity in all parts of Cuba before the 20th of May. The paper marked "C," with the blank properly filled, you will publish in the "Official Gazette" on the morning of the 20th of May instant. At noon on the 20th of May the newly elected President and Congress of Cuba being assembled in one place, you will publicly read to them the declaration of transfer marked "D" and at the same time deliver to the President the original thereof

signed by you. This act will be the operative act to terminate the military government. At some convenient time before the day of this ceremony the President-elect, Mr. Palma, should be informally furnished with a copy of the paper which you propose to read and deliver, in order that he may have an opportunity to consider what reply, if any, he desires to make on the moment, and also have an opportunity, if he wishes to do so, to provide a translation for the information of those members of the Cuban Congress who do not understand English. It would seem appropriate that the Cuban flag should be raised by you immediately after any reply which Mr. Palma may make, and as a part of the same transaction. This is, however, to be arranged between you and Mr. Palma.

Very respectfully,

ELIHU ROOT,
Secretary of War.

Brig. Gen. LEONARD WOOD,
Military Governor of Cuba,
Habana, Cuba.

A.

Whereas the seventh clause of the transitory rules contained in the constitution adopted by the constitutional convention of Cuba provides as follows:

All laws, decrees, regulations, orders, and other rulings which may be in force at the time of the promulgation of this Constitution shall continue to be observed in so far as they do not conflict with the said Constitution until such time as they may be legally revoked or amended, and

Whereas certain of the laws, decrees, regulations, orders and other rulings made and promulgated by the military governor of Cuba and now in force, are in terms specifically applicable and apparently limited to the military government and the officers thereof:

Now, therefore, to the end that the foregoing provision may be fully operative and that none of the matters and things to which said laws, decrees, regulations, orders and rulings relate shall be, or appear to be, without regulation and control after the termination of the military government and pending action thereon by the government established under the said constitution when the same shall have taken effect:

It is hereby declared and ordered that each and every of the said laws, decrees, regulations, orders and other rulings made and promulgated by and under the military government of Cuba shall be deemed to be general and continuing in its character, and to be applicable to and binding upon all officers of the Government of Cuba under whatsoever names or titles who shall succeed the officers of the military government, and to continue in force and effect under whatsoever government shall exist in Cuba until such time as it may be legally revoked or amended pursuant to the provisions of the Constitution aforesaid.

B.

HEADQUARTERS DEPARTMENT OF CUBA,
Havana, May —, 1902.

It is hereby made known to the people of Cuba:

1. That the Congress of Cuba, elected on December 31, 1901, and February 24, 1902, under the provisions of the electoral law published in orders No. 218, October 14, 1901, these headquarters, having been duly convened in Havana on the 5th day of May, 1902, pursuant to orders No. 101, April 14, 1902, these headquarters, has examined into the credentials and decided as to the validity of the election of its members and has found and decided that the following-named persons have been duly elected senators:

(Here will follow the list of senators.)

And the following-named persons have been duly elected representatives:

(Here will follow the list of representatives.)

2. That the Congress so convened, after counting and ratifying the electoral vote, has found and proclaimed to be elected President of the Republic of Cuba Tomas Estrada Palma, and to be elected Vice-President of the Republic of Cuba Luis Esteves Romero.

3. That the said Congress has adjourned to meet at Havana on the 20th day of May, 1902, at 12 o'clock noon.

4. That on the said 20th day of May, 1902, at 12 o'clock noon, the constitution adopted by the constitutional convention at Havana on the 21st day of February, 1901, together with the appendix to the said constitution adopted by said convention on the 12th day of June, 1901, will be promulgated as the constitution of the Republic of Cuba, and will go into full force and effect; and thereupon and at that time the occupation of Cuba by the United States and the military government of the island will cease and determine, and the government and control of the island will be transferred to the President and Congress so elected, to be held and exercised by them under the constitution so promulgated.

Such transfer will be upon the understanding and condition that the new government does thereby and by the acceptance thereof, pursuant to the provisions of the said appendix to the constitution, assume and undertake all and several the obligations assumed by the United States with respect to Cuba by the treaty between the United States of America and Her Majesty the Queen Regent of Spain, signed at Paris on the 10th day of December, 1898.

———— ————,
Military Governor.

C.

HEADQUARTERS DEPARTMENT OF CUBA,
Havana, May 20, 1902.

The following constitution, adopted by the constitutional convention of the people of Cuba on the 21st day of February, 1901, together with and including the appendix thereto, adopted by said convention on the 12th day of June, 1901, is hereby promulgated as the consti-

tution of the Republic of Cuba, and declared to be in full force and effect on and after this day.

(Take in the constitution, omitting date and signatures as marked in pencil in the Gazette of April 14, 1902, marked R.)

———— ————,

Military Governor of Cuba.

D.

HEADQUARTERS DEPARTMENT OF CUBA,
Havana, May 20, 1902.

To the PRESIDENT AND CONGRESS OF THE REPUBLIC OF CUBA.

SIRS: Under the direction of the President of the United States, I now transfer to you as the duly elected representatives of the people of Cuba the government and control of the island; to be held and exercised by you, under the provisions of the constitution of the Republic of Cuba heretofore adopted by the constitutional convention and this day promulgated; and I hereby declare the occupation of Cuba by the United States and the military government of the island to be ended.

This transfer of government and control is upon the express condition, and the Government of the United States will understand, that by the acceptance thereof you do now, pursuant to the provisions of the said constitution, assume and undertake, all and several, the obligations assumed by the United States with respect to Cuba, by the treaty between the United States of America and Her Majesty the Queen Regent of Spain, signed at Paris on the 10th day of December, 1898.

All money obligations of the military government down to this date have been paid as far as practicable. The public civil funds derived from the revenues of Cuba transferred to you this day amounting to $——, are transferred subject to such claims and obligations properly payable out of the revenues of the island as may remain. The sum of $100,000 has been reserved from the transfer of funds to defray anticipated expenses of accounting, reporting, and winding up the affairs of the military government, after which any unexpended balance of said sum will be paid into the treasury of the island.

The plans already devised for the sanitation of the cities of the island and to prevent a recurrence of epidemic and infectious diseases, to which the Government of the United States understands that the provision of the constitution contained in the fifth article of the appendix applies, are as follows:

1. A plan for the paving and sewering of the city of Havana, for which a contract has been awarded by the municipality of that city to McGivney, Rokeby & Co.

2. A plan for waterworks to supply the city of Santiago de Cuba, prepared by Capt. S. D. Rockenbach, in charge of the district of Santiago, and approved by the military governor, providing for taking water from the wells of San Juan Canyon and pumping the same to reservoirs located on the heights to the east of the city.

3. A plan for the sewering of the city of Santiago de Cuba, a contract for which was awarded to Michael J. Dady & Co. by the military governor of Cuba, and now under construction.

4. The rules and regulations established by the President of the United States on the 17th of January, 1899, for the maintenance of quarantine against epidemic diseases at the ports of Havana, Matanzas, Cienfuegos, and Santiago de Cuba, and thereafter at the other ports of the island, as extended and amended and made applicable to future conditions by the order of the military governor, dated ——— ——, published in the Official Gazette of Havana on the —— day of April, 1902.

5. The sanitary rules and regulations in force in the city of Havana (and in any other city having official rules, etc.).

"It is understood by the United States that the present government of the Isle of Pines will continue as a de facto government, pending the settlement of the title to said island by treaty pursuant to the Cuban constitution and the act of Congress of the United States approved March 2, 1902.

"I am further charged by the President of the United States to deliver to you the letter which I now hand you.

———— ————,
Military Governor.

ACTION IN HAVANA UNDER ABOVE INSTRUCTIONS.

Correspondence relative to the United States artillery forces remaining in Cuba after the termination of the military government of that island and their transfer eventually to naval stations, being a letter to Hon. T. Estrada Palma, dated Havana, May 14, 1902, Mr. Palma's reply thereto, dated May 16, and letter of May 14 transmitting the orders of the military governor of Cuba to the commanding officer of artillery forces to remain in Cuba.

HEADQUARTERS MILITARY GOVERNOR, ISLAND OF CUBA,
Havana, May 14, 1902.

Honorable T. ESTRADA PALMA,
President-elect, Republic of Cuba, Havana, Cuba.

SIR: As you are aware, a certain force of artillery are to be left in the fortifications at Santiago, Cienfuegos and Havana, pending such arrangement as to naval stations as are to be made between the Government of the United States and the Government of Cuba.

The posts thus to be garrisoned by the military forces of the United States will be designated and their limits defined by metes and bounds to be shown upon maps, in order that the exact limits of the military jurisdiction of the United States Government over the forces in the military service may be distinctly defined.

The troops thus remaining are to enjoy all the privileges of exterritoriality to which vessels of war visiting the territorial waters of a friendly power are entitled under the generally accepted rules of international law.

These troops will cease to constitute an occupying force and will occupy a status of exterritoriality. They will have no intervention in

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[a] As amended by letters May 10 and 16.

the governmental, local or political affairs of the Cuban Government, and it is desired that you grant an assurance that the Government of the Republic of Cuba will refrain from the exercise of jurisdiction over the officers and men composing the garrisons of the defenses herein described, their armament and equipment, and the public property of the United States which is in their custody and control.

It is further desired that you give thesnecessary assurance that the right of transit of individuals, detachments, or military organizations to and from the United States and from one post to another in the island of Cuba shall not be denied, impeded, or interfered with, and the right of the United States Government to inspect and communicate with the garrisons above named and of its subordinate military commanders to communicate with each other and with their superiors in the United States by mail, telegraph, telephone, or by special messenger, shall be maintained and protected; and that the military commands herein referred to shall have the right to procure supplies in the island of Cuba, to receive military stores, and munitions of war from the United States, and to ship stores, military supplies, and public property of all kinds and the private property of officers and enlisted men to the United States, from one point to another in the island of Cuba; that such importations and exports shall be exempt from customs inspections and duties, from insular taxation and from municipal impositions of all kinds; and that such stores, supplies, and munitions shall, during their transit from point to point in Cuba, be entitled to a similar immunity from local jurisdiction and from seizure by way of execution or otherwise. The commanding officer will be instructed to see that there is no abuse of the courtesy thus extended.

Assurance is also requested that the Government of Cuba pledge itself to protect the individual officers and enlisted men, or detachments of troops under proper commands, while outside of the limits of the reservation hereinbefore described; and that the proper local authorities be instructed to protect individual officers and enlisted men who may find themselves without the limits of their respective reservations, while engaged in private business, in making or returning official or personal visits, or while engaged in travel.

Assurance on these points is desired from you as President-elect of Cuba, with the further assurance that the Executive branch of the Cuban Government will exercise its influence to the end that that Cuban Government, when constituted, will duly confirm the assurances above requested.

The officers and troops of the United States will render appropriate honors to the Cuban flag and to all officials of the Cuban Government.

It is earnestly desired that the subject-matter of this letter receive your early consideration and approval.

Very respectfully,

LEONARD WOOD,
Military Governor of Cuba.

HAVANA, *May 16, 1902.*

General LEONARD WOOD,
Military Governor of Cuba.

SIR: I beg to acknowledge your communication of the 14th instant in reference to the force of United States Artillery which are to remain

in certain fortifications of the island of Cuba, pending the arrangement as to naval stations to be made between the Government of the United States and the Government of Cuba.

I give you the assurances, as President-elect, that I will do all which depends on me to carry out the desires expressed in the said communication.

Yours, very truly, T. ESTRADA PALMA.

HEADQUARTERS MILITARY GOVERNOR, ISLAND OF CUBA,
Havana, May 14, 1902.

Colonel WILLIAM L. HASKIN,
Artillery Corps, U. S. Army,
Commanding Artillery Defenses, Havana, Cuba.

SIR: You have been designated to command the United States forces which are to remain in Cuba subsequent to the termination of the military government on the 20th of May, 1902.

The following relative to your duties, and all that pertains to your relation with the Cuban Government, is transmitted to you for your information and guidance. The posts to be garrisoned by the troops under your command are:

(1) *Morro Castle Barracks, Santiago, Cuba.* The military jurisdiction will be coincident with the boundaries of the military reservation as heretofore recognized by the military government, and as indicated on the within map hereunto attached, marked "A."

(2) *Rowell Barracks*, at the entrance of the harbor of Cienfuegos, Cuba. The military jurisdiction to be coincident with the present territory occupied as a military reservation, as indicated in the map hereunto attached, marked "B."

(3) *Cabana Barracks*, on the eastern side of the entrance to the harbor of Havana, including Batteries Nos. 1 and 2 and Velasco Battery.

The military jurisdiction over the barracks and batteries above mentioned will be coincident with the territory embraced in the map hereunto attached, marked "C." The jurisdiction of the military commander does not include the Morro and Cabana fortresses.

(4) *Santa Clara Battery and batteries Nos. 3, 4, and 5.*—The military jurisdiction being coincident with the maps hereunto attached, marked "D," "E," and "F."

All forts and reservations occupied by troops will, in addition to being shown on maps and plans, be described by metes and bounds, and the lines of demarcation so described and shown will mark and define the limits of the military jurisdiction of the United States Government over the forces in its military service.

The troops remaining as garrisons of the military defenses referred to at Havana, Cienfuegos, and Santiago will cease to constitute an occupying force and will enjoy all the privileges of exterritoriality to which vessels of war visiting the territorial waters of a friendly power are entitled under the generally accepted rules of international law.

The duties of the senior officer will be restricted to the command of the military forces under his orders, and he will under no circumstances exercise or attempt to exercise any authority whatever in the

governmental affairs of Cuba; and as to himself and the officers and men under his command will carefully abstain from all interference in local or political affairs.

Assurance will be requested from the Government of Cuba that it will refrain from the exercise of jurisdiction over the officers and men composing the garrisons of the defenses hereinbefore described, their armament and equipment, and the public property of the United States which is in their custody and control.

The troops of the United States so remaining in the Island of Cuba, and there enjoying the privileges of exterritoriality, are to be under the exclusive military command and control of the senior officer stationed therewith, and assurance will be obtained from the Cuban Government that the right of transit of individuals, detachments, or military organizations, to and from the United States and from one post to another in the island of Cuba, shall not be denied, impeded, or interfered with, and the right of the United States Government to inspect and communicate with the garrisons above named, and of its subordinate military commanders to communicate with each other and with their military superiors in the United States by mail, telegraph, telephone, or by special messenger, shall be maintained and protected.

Assurance will be requested from the Cuban Government that it will permit the several military commands to receive military stores, and munitions of war from the United States, and to ship stores, military supplies, and public property of all kinds, and the private property and baggage of officers and enlisted men to the United States, or from one point to another in the island of Cuba; that such importations and exports shall be exempt from customs duties and inspections, from insular taxation and from municipal impositions of all kinds; and that such stores, supplies and munitions shall, during their transit from point to point in Cuba, be entitled to immunity from local jurisdiction and from seizure by way of execution or otherwise, and you are instructed to exercise all necessary precautions to see that the courtesy hereby extended is not abused.

The Government of Cuba will also be asked to protect individual officers and enlisted men, or detachments of troops under proper military commands, while on duty outside of the limits of the reservations hereinbefore referred to. The proper local authorities will also be requested to protect individual officers and enlisted men, who may find themselves without the limits of their respective reservations, while engaged in private business, in making or returning official or personal visits, or while engaged in travel.

You must bear always in mind that even the appearance of interference in governmental or political affairs must be avoided by the officers and forces of the United States; and that appropriate military honors will be rendered the Cuban flag and to all officers of the Cuban Government who are entitled thereto, and its representatives with whom you may come into personal or official contact will be treated with the greatest courtesy and consideration upon all occasions.

Very respectfully,

LEONARD WOOD,
Military Governor of Cuba.

No. 148. HEADQUARTERS DEPARTMENT OF CUBA,
Havana, May 13, 1902.

Whereas the seventh clause of the transitory rules contained in the constitution adopted by the constitutional convention of Cuba provides as follows:

"All laws, decrees, regulations, orders and other rulings which may be in force at the time of the promulgation of this constitution shall continue to be observed, in so far as they do not conflict with the said constitution, until such time as they may be legally revoked or amended."

And whereas certain of the laws, decrees, regulations, orders and other rulings made and promulgated by the military governor of Cuba and now in force are in terms specifically applicable and apparently limited to the military government and the officers thereof;

Now, therefore, to the end that the foregoing provision may be fully operative, and that none of the matters and things to which said laws, decrees, regulations, orders and rulings relate shall be or appear to be without regulation and control after the termination of the military government and pending action thereon by the government established under the said constitution when the same shall have taken effect,

It is hereby declared and ordered that each and every of the said laws, decrees, regulations, orders and other rulings made and promulgated by and under the military government of Cuba shall be deemed to be general and continuing in its character, and to be applicable to and binding upon all officers of the Government of Cuba under whatsoever names or titles who shall succeed the officers of the military government, and to continue in force and effect under whatsoever government shall exist in Cuba until such time as it may be legally revoked or amended pursuant to the provisions of the constitution aforesaid.

[SEAL.]

LEONARD WOOD,
Military Governor.

No. 158. HEADQUARTERS DEPARTMENT OF CUBA,
Havana, May 16, 1902.

It is hereby made known to the people of Cuba:

1. That the Congress of Cuba elected on December 31, 1901, and February 24, 1902, under the provisions of the electoral law published in Orders No. 218, October 14, 1901, these headquarters, having been duly convened in Havana on the 5th day of May, 1902, pursuant to Orders No. 101, April 14, 1902, these headquarters, has examined into the credentials and decided as to the validity of the election of its members and has found and decided that the following-named persons have been duly elected senators:

	Province.
Adolfo Cabello y Bermúdez	Havana.
Nicasio Estrada y Mora	"
Carlos I. Párraga y Hernández	"
Alfredo Zayas y Alfonso	"
Luis Fortún y Govín	Matanzas.
Pedro E. Betancourt y Dávalos	"
Domingo Méndez Capote	"
Manuel Sanguily y Garit	"

	Province.
Antonio Sánchez Bustamante y Sirvent	Pinar del Río.
Manuel Lazo Valdés	"
Ricardo Dolz y Arango	"
Antonio Gonzáles Beltrán	"
Francisco Carillo y Morales	Santa Clara.
José de Jesús Monteagudo y Consuegra	"
Martín Morúa Delgado	"
José Antonio Frías y Pérez	"
Salvador Cisneros Betancourt	Puerto Príncipe.
Manuel Ramón Silva Zayas	"
Augusto Betancourt Pichardo	"
Tomás Recio Loináz	"
Antonio Bravo Correoso	Santiago de Cuba.
Eudaldo Tamayo Pavón	"
José Fernández Rondán	"
Federico Rey Bruchet	"

and the following-named persons have been duly elected representatives:

	Province.
Gonzalo de Quesada	Pinar del Río.
Alberto Nodarse	"
Alfredo Betancourt Manduley	"
Faustino Guerra	"
Guillermo Gonzáles Arocha	"
José Antonio Blanco	"
José Rodriguez Acosta	"
Juan José de la Maza y Artola	Havana.
Francisco Peraza	"
Augustín García Osuna	"
Mario Garcia Kohly	"
Ambrosio Borjes	"
José Lorenzo Castellanos	"
Gustavo Pérez Abreu	"
Carlos de la Torre	"
Felipe Gonzáles Sarraín	"
Antonio Gonzalo Pérez	"
Francisco Leyte Vidal	"
Francisco Chenard	"
Bernabé Boza	"
José A. Malberti	"
José Manuel Govín	"
Carlos Font Sterling	"
Juan Antonio Garmendía	Matanzas.
Manuel Sobrado	"
Teodoro Cardenal	"
Joaquin García Pola	"
Felipe Fontanills	"
Alejandro Neyra	"
Fernando Méndez Capote	"
Juan Felipe Risquet	"
Pedro Cué	Santa Clara.
José M. Núñez	"
Ricardo Fusté	"
Pebro Albarran	"
Carlos Mendieta	"
Santiago García Cañizares	"
Enrique Villuendas	"
Antonio Torrado	"
Pelayo García	"
Rafael Martínez Ortíz	"
Manuel Gutiérrez Quirós	"
Gonzalo García Vieta	"
Fernando Escobar	"
Augustín Cruz Gonzáles	"
Juan Xiqués y Arango	Puerto Príncipe.
Pedro Mendoza Guerra	"

	Province.
Enrique Loináz del Castillo	Puerto Príncipe.
Francisco Duque Estrada Varona	"
Rafael Portuondo Tamayo	Santiago de Cuba.
Carlos Manuel de Céspedes	"
Luis A. Columbié	"
Mariano Corona	"
Pedro Martínez Rojas	"
Antonio Poveda Ferrer	"
Juan León Bello	"
Augustín Cebreco	"
Alvaro Catá	"
Américo Feria Nogales	"
Antonio Masferrer y Grave de Peralta	"
Faustino Sirvén	"

2. That the Congress so convened, after counting and ratifying the electoral vote has found and proclaimed to be elected President of the Republic of Cuba Tomás Estrada Palma, and to be elected Vice-President of the Republic of Cuba Luis Estévez Romero.

3. That the said Congress has adjourned to meet at Havana on the 20th day of May, 1902, at 12 o'clock noon.

4. That on the said 20th day of May, 1902, at 12 o'clock noon, the constitution adopted by the constitutional convention at Havana on the 21st day of February, 1901, together with the appendix to the said constitution adopted by said convention on the 12th day of June, 1901, will be promulgated as the constitution of the Republic of Cuba, and will go into full force and effect; and thereupon and at that time the occupation of Cuba by the United States the military government of the island will cease and determine, and the government and control of the island will be transferred to the President and Congress so elected, to be held and exercised by them under the constitution so promulgated.

Such transfer will be upon the understanding and condition that the new government does thereby and by the acceptance thereof, pursuant to the provisions of the said appendix to the constitution, assume and undertake all and several the obligations assumed by the United States with respect to Cuba by the treaty between the United States of America and Her Majesty the Queen Regent of Spain, signed at Paris on the 10th day of December, 1898.

LEONARD WOOD,
Military Governor.

* * * * * * * *

PAPERS

ACCOMPANYING

THE REPORT OF THE SECRETARY OF WAR.

ANNUAL REPORT OF THE ADJUTANT-GENERAL.

WAR DEPARTMENT,
ADJUTANT-GENERAL'S OFFICE,
Washington, November 1, 1902.

SIR: The following returns of the Army for the fiscal year ended June 30, 1902, are respectfully submitted:

A.—Strength of the Regular Army of the United States, June 30, 1901, and June 30, 1902, with losses from all causes between those dates.

B.—Strength of the Army by divisions, departments, etc., between July, 1901, and June, 1902.

C.—Statement showing the monthly strength and losses from all causes in the armies of the United States between July 1, 1901, and June 30, 1902.

D.—Deaths in the armies of the United States between July, 1901, and June 30, 1902.

E.—Dates of sailing, and troops sent to the Philippine Islands.

F.—Retirements, resignations, deaths, etc., among officers between October 1, 1901, and October 1, 1902.

THE ARMY.

Under the act of February 2, 1901, to increase the efficiency of the permanent military establishment of the United States, the enlisted maximum strength of the Army (including the corps of Philippine scouts, which was limited to 12,000 in number) was not to exceed 100,000 men, and in May of that year the President authorized the organization of the Army on a basis of 77,287 enlisted men. July 1, 1902, the maximum strength was reduced to 66,711, and October 24, 1902, it was further reduced to 59,866; and to carry out the orders to reduce the army to the strength prescribed by General Orders, No. 108, A. G. O., October 25, 1902 (59,866), the following instructions have been given by cable to the commanding general, Division of the Philippines:

To reduce the enlisted strength of the cavalry and infantry of his command by December 1 next by transferring therefrom to coast and field artillery and engineers men who are fit and willing, so as to bring the artillery and engineer company organizations to the strength

authorized. Of the enlisted force of cavalry and infantry remaining, 2,000 to be discharged, in the following order of precedence:

First. Those discharged for the good of the service, particularly such as are serving long sentences of general court-martial. Of this latter class, discretionary authority has been given to discharge without honor all whose service, as determined under A. R. 162, has not been honest and faithful, without requiring proceedings of boards to be sent to the Secretary of War.

Second. Those who by illness or climatic influence are run down and out of condition. Discharge to be given on account of services being no longer required or on surgeon's certificate, as justice to men and interests of the Government demand; and if necessary, then

Third. Those serving in last year of enlistment who do not intend to reenlist. Discharges to be on account of services being no longer required.

Fourth. Deserving men not in last year of service who desire discharge for cogent reasons. Discharge to be on account of services being no longer required.

He has been further informed that the reduction of the enlisted strength of cavalry and infantry of his command should continue by ordinary expirations, etc., until strength of 65 enlisted men per company organization is reached.

Instructions have also been given to the several department commanders in the United States that all organizations of infantry and cavalry in their respective commands shall be reduced to 65 per company, in a very short time, by transfers, and through discharges in the order of precedence indicated in cablegram to the commanding general, Division of the Philippines.

In this reduction exception has been made in favor of the organizations stationed at Forts Leavenworth and Riley, Pekin, and in Alaska.

The effect of these instructions will be to make the enlisted strength of the Army at an early date, exclusive of the Hospital Corps, Philippine scouts, and Porto Rico regiment, as follows:

In Philippines	13,480	
Coast artillery in United States, Cuba, and Hawaii	13,298	
Field artillery in United States	3,320	
Nine bands and sergeants-major	300	
Cavalry in United States (including bands, regimental, and squadron noncommissioned staff)	8,460	
Infantry in United States (including bands, regimental and battalion noncommissioned staff)	16,645	
Infantry in Pekin	150	
Infantry in Alaska	624	
Engineers in United States (including band)	866	
		57,143
STAFF DEPARTMENTS.		
U. S. Military Academy	342	
Signal Corps	810	
Ordnance Department (including ordnance-sergeants)	700	
Post commissary-sergeants	200	
Post quartermaster-sergeants	150	
Electrician-sergeants	100	
Indian scouts	75	
Recruiting parties and recruits	500	
		2,877
Total		60,020

The excess of 154 over the total of 59,866 authorized in G. O. No. 108 is explained as follows:

6 companies in Alaska allowed to retain temporarily 39 extra men, each	234
Deduct 4 troops of cavalry at Fort Riley, not yet at station, at 20 extra, each	80
	154

Under restrictions imposed upon the recruiting service by General Orders, 108, and the additional contraction thereof resulting from the policy of reduction as directed by telegrams and circular letters to recruiting officers, the enlistments during the month of November will be no more than necessary to keep the artillery and engineers at the proposed strength. As soon as the excess in the Philippines is absorbed and all company organizations of cavalry and infantry there stationed are brought down to 65, it will be necessary to continue the recruiting service as organized just prior to this reduction, since experience shows that the results thereof, owing to the system of careful selection of recruits, will only be to produce the number necessary to keep up the Army to the enlisted strength authorized (59,866).

The actual strength of the Army on October 15, 1902, was 3,586 officers and 66,003 enlisted men, as shown by the following table, which, in detail, gives the strength of the several corps, departments, regiments, etc.:

Department, corps, or regiment.	Officers.	Enlisted men.	Total.
General officers	21	.....	21
Adjutant-General's Department	27	.....	27
Inspector-General's Department	17	.....	17
Judge-Advocate General's Department	12	.....	12
Quartermaster's Department	94	149	243
Subsistence Department	44	200	244
Medical Department	271	3,598	3,869
Pay Department	53	.....	53
Corps of Engineers	149	1,167	1,316
Ordnance Department	58	662	720
Signal Corps	35	697	732
Record and Pension Office	2	.....	2
Chaplains	54	.....	54
Electrician sergeants	.....	64	64
First Cavalry	49	899	948
Second Cavalry	49	911	960
Third Cavalry	47	803	850
Fourth Cavalry	48	775	823
Fifth Cavalry	50	881	931
Sixth Cavalry	50	856	906
Seventh Cavalry	48	876	924
Eighth Cavalry	47	782	829
Ninth Cavalry	50	1,074	1,124
Tenth Cavalry	47	935	982
Eleventh Cavalry	49	1,019	1,068
Twelfth Cavalry	49	860	909
Thirteenth Cavalry	50	856	906
Fourteenth Cavalry	50	890	940
Fifteenth Cavalry	50	1,085	1,135
Total cavalry	783	13,502	14,235
Artillery Corps:			
30 field batteries	112	3,599	3,711
126 companies coast artillery	527	13,011	13,538
Sergeant-majors	.....	48	48
10 bands	.....	253	253
Total artillery	639	16,911	17,550
First Infantry	47	1,449	1,496
Second Infantry	47	1,348	1,395
Third Infantry	46	751	797
Fourth Infantry	46	809	855
Fifth Infantry	47	1,167	1,214

Department, corps, or regiment.	Officers.	Enlisted men.	Total.
Sixth Infantry	44	780	824
Seventh Infantry	46	909	955
Eighth Infantry	44	879	923
Ninth Infantry	45	834	879
Tenth Infantry	50	1,284	1,334
Eleventh Infantry	47	1,444	1,491
Twelfth Infantry	44	814	858
Thirteenth Infantry	44	756	800
Fourteenth Infantry	44	908	952
Fifteenth Infantry	46	967	1,013
Sixteenth Infantry	47	863	910
Seventeenth Infantry	45	823	868
Eighteenth Infantry	44	868	912
Nineteenth Infantry	48	430	478
Twentieth Infantry	49	765	814
Twenty-first Infantry	44	707	751
Twenty-second Infantry	46	872	918
Twenty-third Infantry	43	714	757
Twenty-fourth Infantry	44	1,126	1,170
Twenty-fifth Infantry	43	1,187	1,230
Twenty-sixth Infantry	45	1,157	1,202
Twenty-seventh Infantry	48	1,412	1,460
Twenty-eighth Infantry	47	1,278	1,325
Twenty-ninth Infantry	49	1,499	1,548
Thirtieth Infantry	48	1,257	1,305
Total infantry	1,377	30,057	31,434
West Point detachment	.....	409	409
Recruits, etc	.....	1,899	1,899
Discharge camp, California	.....	225	225
Indian scouts	.....	61	61
Total	.....	2,594	2,594
Grand total	3,586	[a] 66,003	69,589

[a] Enlisted men of the Hospital Corps not included in the grand total.

In addition, there are in the service the following:

Enlisted men of the Hospital Corps, not included as part of the enlisted force of the Army under the provisions of the act of March 1, 1887 (3,598 men)	3,598
Porto Rico regiment (29 officers, 840 men)	869
Philippine scouts (100 officers, 4,978 men)	5,078
Medical officers, volunteers (182 officers)	182
Total (311 officers, 9,416 men)	9,727

Distribution of the Army, October 15, 1902.

Country.	Officers.	Enlisted men.	Hospital Corps.	Total.
United States	2,476	44,163	1,868	48,507
Philippine Islands	1,039	19,800	1,594	22,433
Cuba	26	819	39	884
Porto Rico	11	228	37	276
Hawaiian Islands	9	198	15	222
China	2	131	5	138
Alaska	23	664	40	727
Total	3,586	66,003	3,598	73,187

In addition to the above there are serving—

In United States, 24 medical officers, volunteers. All volunteer medical officers are under orders for honorable discharge on account of service being no longer required. This will be accomplished as fast as they reach the United States.

In Porto Rico, 29 officers and 840 enlisted men, Porto Rico regiment.

In Philippine Islands, 158 medical officers, volunteers; 100 officers and 4,978 enlisted men, Philippine scouts.

The total number of the losses in the Army during the year ended June 30, 1902, was 47,727, as follows:

Officers:		
Killed in action, died of wounds or disease, etc.	35	
Resigned, etc.	21	
Retired	68	
		124
Enlisted men:		
Killed in action, died of wounds or disease, etc.	1,227	
Discharged upon expiration of term of service	35,806	
Discharged for disability, by sentence of court-martial, and by order	5,698	
Deserted	4,667	
Missing	2	
Retired	203	
		47,603
Total		47,727

Seventeen officers and 172 men were wounded.

The partial increase of the Army in 1898 by reason of the breaking out of hostilities with Spain and its reorganization with increased numbers on the disbandment of the large Volunteer Army called into service during the Spanish-American war necessitated the appointment of a large number of officers. Of the 1,740 appointments made since January 1, 1898, as shown by the following table, 276 were of graduates of the Military Academy, 376 were of enlisted men of the Army, 477 from civil life, and 615 from ex-officers and enlisted men of volunteers. All appointments were made to the grade of second lieutenants, except 216 of those made from ex-officers and enlisted men of volunteers, which were to the grade of first lieutenant—65 in the cavalry, 82 in the artillery, and 69 in the infantry.

Whence made.	Cavalry.	Artillery.	Infantry.	Total.
Year ending December 31, 1898:				
Military Academy		12	40	52
Enlisted men, U. S. Army		12	15	27
Civil life		56	148	204
Total		80	203	283
Year ending December 31, 1899:				
Military Academy	12	15	39	66
Enlisted men, U. S. Army	10		44	54
Civil life	28		152	180
Total	50	15	235	300
Year ending December 31, 1900:				
Military Academy	22	17	10	49
Enlisted men, U. S. Army	6	1	59	66
Civil life	2		17	19
Total	30	18	86	134
Year ending December 31, 1901:				
Military Academy	34	28		62
Enlisted men, U. S. Army	66	28	121	215
Volunteer officers and enlisted men	162	135	199	496
Civil life	7	11	10	28
Total	269	202	330	801
Six months ending June 30, 1902:				
Military Academy	24	13	10	47
Enlisted men, U. S. Army	4	2	8	14
Volunteer officers and enlisted men	17	73	29	119
Civil life	3	7	32	42
Total	48	95	79	222
Grand total	397	410	933	1,740

The probable number of enlisted men in the Army during the fiscal year ending June 30, 1904, who will be entitled to increased pay under the acts of August 4, 1854, and May 15, 1872, is as follows:

Under act of August 4, 1854.

5 years' continuous service ($2 per month)	5,618
10 years' continuous service ($3 per month)	2,068
15 years' continuous service ($4 per month)	1,387
20 years' continuous service ($5 per month)	851
25 years' continuous service ($6 per month)	333
30 years' continuous service ($7 per month)	43

Under act of May 15, 1872.

$1 per month for third year of service	15,570
$2 per month for fourth year of service	7,320
$3 per month for fifth year of service	6,260

Showing the presence in the ranks of 19,181 men who have served more than three years and 4,682 men who have a continuous service of five years and upward.

The probable number of men who will be entitled to discharge by reason of expiration of term of service is 14,119.

CHINA.

Company B, Ninth Infantry, has been retained in China as guard to the United States legation, to be governed in all except strictly professional and administrative matters by the wishes and desires of the United States minister. The instructions to the commanding officer of the guard state that his force will be used to repel attacks made on the American legation or its own position, and, if necessary to do so, may fire upon the assailants, but must not be used aggressively unless in defense of the American legation or of persons or property of American citizens in its immediate vicinity. The guard may cooperate with other foreign troops for defense of the legations in event of attack being made on same.

CUBA.

On the withdrawal of the army from Cuba, May 20, 1902, a small force, consisting of eight companies of the coast artillery, remained on the island for temporary purposes. Four companies are stationed at Habana, two at Cienfuegos, and two at Santiago. The total strength there now is 26 officers and 858 enlisted men.

PORTO RICO.

In addition to the Porto Rico native regiment which, October 15, 1902, numbered 29 officers and 840 enlisted men, there were on duty in that island two companies of coast artillery, 11 officers and 265 enlisted men.

THE PHILIPPINES.

Under the provisions of the act of July 1, 1902, "temporarily to provide for the administration of affairs of civil government in the Philippine Islands," the commanding general of the Division of the

Philippines was relieved from the further performance of the duties of military governor of the archipelago and that office discontinued.

July 1, 1902, 201 stations in the islands were occupied by the troops, and 50 companies of Philippine scouts were in service.

The following troops are now serving in the Philippines:

	Officers.	Enlisted men.
Second battalion, United States Engineers	27	412
First, Fifth, Sixth, Eleventh, and Fifteenth regiments, cavalry	248	4,740
Fourteenth, Fifteenth, and Twenty-fifth batteries, field artillery	12	358
Twenty-fifth, Twenty-seventh, Thirty-first, and Thirty-sixth companies, coast artillery	15	423
First, Second, Fifth, Tenth, Eleventh, Twenty-sixth, Twenty-seventh, Twenty-eighth, Twenty-ninth, and Thirtieth regiments, infantry	475	13,295
General and staff officers, enlisted men, Signal Corps, Hospital Corps, noncommissioned staff, band, etc	262	2,166
Total	1,039	21,394

The total number of troops that served in the Philippine Islands between June 30, 1898 (date of first arrival of troops), and July 4, 1902, the ending of the insurrection, was:

	Officers.	Enlisted men.
Regulars	1,882	74,534
Volunteers	2,185	47,867
Total	4,067	122,401

Of this number about 1,135 officers and 23,000 men served there more than once.

The maximum strength there at any one time was in December, 1900, 69,420 officers and men.

The average monthly strength was approximately 40,000.

The casualties during this period were as follows:

	Regulars.		Volunteers.		Total.	
	Officers.	Enlisted men.	Officers.	Enlisted men.	Officers.	Enlisted men.
Killed	32	353	22	388	54	741
Died of—						
Wounds	10	96	7	129	17	225
Disease	26	1,673	21	1,028	47	2,701
Accident	2	96	4	38	6	134
Drowning	2	202	4	61	6	263
Suicide	3	58	6	15	9	73
Murder or homicide	1	69		28	1	97
Total deaths	76	2,547	64	1,687	140	4,234
Wounded	71	1,165	133	1,653	204	2,818

In this are included 18 enlisted men killed; 1 officer and 14 enlisted men died of wounds; 2 officers and 174 enlisted men died of disease, etc., and 11 officers and 100 enlisted men wounded during the war with Spain, or up to February 4, 1899.

The total contacts with the enemy between February 4, 1899, and July 4, 1902, were 2,811. The larger proportion of these fights were attacks from ambush on the American troops. In almost no case in

these engagements did American troops surrender or retreat or leave their dead and wounded in the possession of the enemy, notwithstanding that in many cases the percentage of loss was high.

The number of killed of the enemy was in many cases estimated. As a rule no estimate was made in reports of the enemy's wounded. His wounded, and often his dead, were carried off before the Americans occupied the hostile positions. The killed of the enemy being, as a rule, overestimated, and the wounded not reported, by the Americans, gave rise to an erroneous impression that the wounded were dispatched, which never happened.

LIST OF PRINCIPAL COMBATS DURING THE PHILIPPINE INSURRECTION, FEBRUARY 4, 1899, TO JULY 4, 1902.

Engagements around Manila, 1899.

Feb. 4, 5, 1899.....Battle of Manila. Thirteen regiments engaged, Maj. Gen. E. S. Otis, commanding. United States loss, 238—44 killed, 194 wounded; insurgent loss, 700 killed, many wounded. Occasion, insurgent attack on our lines. Includes combats at Chinese Hospital, La Loma Church, Pasay, San Juan Hill, Santa Mesa, Singalon, Pumping Station, Santa Ana, and San Pedro Macati.

Feb. 10, 1899.....Battle of Caloocan. Seven regiments engaged, Maj. Gen. Arthur MacArthur, commanding. United States loss, 50—5 killed, 45 wounded; insurgent loss, 200 killed, 800 wounded. Occasion, rectification of United States lines around Manila.

Feb. 23, 1899.....Battle of Tondo. Seven regiments engaged, Maj. Gen. Arthur MacArthur, commanding. United States loss, 39—5 killed, 34 wounded; insurgent loss, 500 killed and wounded. Occasion, uprising in barrio of Tondo, Manila, in rear of our lines, participated in by insurgent army. Fighting extended to Caloocan. This includes actions at Tondo and Caloocan.

Mar. 13, 1899.....Battle of Guadaloupe Church. Five regiments engaged, Brig. Gen. L. Wheaton, commanding. United States loss, 28—3 killed, 25 wounded; insurgent loss, 200 killed and wounded. Occasion, rectification of United States lines around Manila.

Mar. 15, 1899.....Battle of Pasig. Three regiments engaged, Brig. Gen. L. Wheaton, commanding. United States loss, 4—1 killed, 3 wounded; insurgent loss, 1,000 killed, wounded, and prisoners. Occasion, capture of city of Pasig.

Mar. 18, 1899.....Battle of Taguig. One battalion Twenty-second infantry, engaged, Brig. Gen. L. Wheaton, commanding. United States loss, 20—3 killed, 17 wounded; insurgent loss not reported.

Mar. 31, 1899.....Combat of Nanca River (near Mariquina). Two regiments engaged, Brig. Gen. R. H. Hall, commanding. United States loss, 18—1 killed, 17 wounded; insurgent loss not reported. Occasion, abortive advance toward San Mateo.

Apr. 9, 1899.....Combat of Santa Cruz. Twenty companies engaged, Maj. Gen. H. W. Lawton, commanding. United States loss, 7 wounded; insurgent loss, 93 killed, many wounded. Occasion, expedition to Santa Cruz, on Laguna de Bay.

June 13, 1899.....Zapote River. Four regiments engaged, Maj. Gen. H. W. Lawton, commanding. United States loss, 45—8 killed, 37 wounded; insurgent loss, 150 killed, 375 wounded.

Aug. 12, 1899.....Combat of San Mateo. Seven companies engaged, Capt. James Parker, Fourth Cavalry, commanding. United States loss, 20—4 killed, 16 wounded; insurgent loss, 24 killed, wounded not reported. Occasion, capture of town of San Mateo. Town evacuated by United States forces next day.

Dec. 19, 1899.....Combat of San Mateo. Two regiments engaged. Maj. Gen. H. W. Lawton, commanding. United States loss, 14—1 killed, 13 wounded. General Lawton killed. Insurgent loss, 40 killed, 125 wounded. Occasion, capture of town of San Mateo.

Advance to Malolos, Maj. Gen. Arthur MacArthur, commanding.

General MacArthur estimates 1,000 insurgents killed and many wounded in this advance.

Mar. 25, 26, 1899.....Battle of Tuliahan River. Ten regiments engaged. United States loss, 29 killed, 200 wounded, including Col. H. C. Egbert, Twenty-second Infantry, U. S. A. Insurgent loss not reported. Includes attack of entrenchments at Caloocan and San Francisco del Monte, March 25, and assault of entrenched defenses of town of Melinto and action at Meycauayan, March 26.

Mar. 27, 1899.....Battle of Marilao River. Seven regiments engaged. United States loss, 79—14 killed, 65 wounded; insurgent loss not reported. Main action, crossing Marilao River under fire and assault of intrenchments on other side of river.

Mar. 29–30, 1899.....Battle of Malolos. Eight regiments engaged. United States loss, 113—8 killed, 105 wounded; insurgent loss not reported. Main actions, the crossing under fire of the Bocaue River and of the Guiguinto River, and engagements in front of Malolos and at Melinto.

Advance to San Fernando, Maj. Gen. Arthur MacArthur, commanding.

Apr. 23–27, 1899.....Battle of Calumpit. Eight regiments engaged. United States loss, 149—22 killed, 127 wounded. Col. J. M. Stotsenburg, First Nebraska, killed; insurgent loss, 200 killed, many wounded. Main actions, crossing under fire of Bagbag River, April 23 and 24; crossing under fire of Rio Grande, April 27; includes actions at Buingua, Norzagary, Pulilan, Angat, and Apalit. Notable exploits, Col. F. Funston's passage by swimming of Bagbag River under fire April 25; forcing passage of Rio Grande under fire April 27.

May 4, 1899.....Combat of Santo Tomas. Five regiments engaged. United States loss, 32—5 killed, 27 wounded; insurgent loss not reported.

Advance to Tarlac, October and November, 1899, Maj. Gen. Arthur MacArthur, commanding.

Oct. 16, 1899.....Combat of Angeles. Three regiments engaged. United States loss, 10—1 killed, 9 wounded; insurgent loss not reported.

Nov. 11, 1899.....Combat of Bamban. Four regiments engaged. United States loss, 2—2 wounded; insurgent loss not reported.

General Wheaton's expedition to Dagupan, 1899.

Nov. 11, 1899.....Combat of San Jacinto. Thirty-third Infantry engaged. United States loss, 22—7 killed, 15 wounded. Insurgent loss, 134 killed; wounded not reported. Maj. J. A. Logan killed.

General Young's raid to the north, November and December, 1899.

Nov. 14, 1899.....Combat of Manoag. Three troops Third Cavalry engaged. Brig. Gen. S. B. M. Young, commanding. United States loss, none; insurgent loss not known. Occasion, charge of cavalry, totally dispersing 1,300 men of Aguinaldo's army.

Nov. 19, 1899.....Combat of Santa Tomas. Two troops Third Cavalry engaged. Maj. S. M. Swigert, commanding. United States loss, 8—1 killed, 7 wounded; insurgent loss, 9 killed.

Dec. 2, 1899.....Combat of Tila Pass. One battalion, Thirty-third Infantry, engaged, Maj. P. C. March, commanding. United States loss, 11—2 killed, 9 wounded; insurgent loss, 52 killed and wounded.

Dec. 4, 1899.....Combat of Tangadan Mountain. Two battalions, Thirty-third and Thirty-fourth Infantry, engaged, Brig. Gen. S. B. M. Young, commanding. United States loss, 13; insurgent loss, 115—35 killed, 80 wounded.

Dec. 4, 1899.....Combat of Vigan. One company and detachment, Thirty-third Infantry, engaged, Lieut. Col. J. Parker, commanding. United States loss, 11—8 killed, 3 wounded; insurgent loss, 100 killed. Attacked in barracks at night by superior force.

Occupation of southern provinces of Luzon, January and February, 1900.

PRINCIPAL COMBATS.

Jan. 6, 1900.....Binang. Brig. Gen. Theodore Schwan's expedition. United States loss, 2—1 killed, 1 wounded; insurgent loss, 45 killed, wounded, and missing.

Jan. 7, 1900.....Imus. Thirty-eighth Volunteers, Col. W. E. Birkhimer, commanding. United States loss, 8—8 wounded; insurgent loss, 245 killed and wounded.

Jan. 19, 1900.....Taal. Battalion Thirty-eighth Infantry, Maj. E. M. Johnston, jr., commanding. United States loss, 6 wounded; insurgent loss, 15 killed and wounded.

Jan. 21, 1900.....San Pablo. Brig. Gen. Theodore Schwan's expedition. United States loss, 14—1 killed, 13 wounded; insurgent loss, 37 killed; wounded unknown.

Jan. 23, 1900.....Legaspi, Province of Albay. Forty-seventh Infantry, Brig. Gen. W. A. Kobbé, commanding. United States loss, 7 wounded; insurgent loss, 50 killed and wounded.

Feb. 20, 1900.....Libmanan, Province of Camarines. Fortieth Infantry, Col. E. A. Godwin, commanding. United States loss, 9 killed and wounded; insurgent loss, 85 killed, wounded, and prisoners.

Isolated engagements, 1900.

Mar. 26, 1900.....Near Antimonan, Tayabas. Battalion Thirtieth Infantry, Maj. J. F. Hartigan, commanding. Loss of insurgents, 133 killed, wounded, and prisoners.

Apr. 7, 1900.....Cagayan. Garrisoned by battalion Fortieth Infantry, Col. E. A. Godwin, commanding. Attacked by large body of insurgents. United States loss, 4 killed, 9 wounded; insurgent loss, 38 killed; wounded not known.

Apr. 15, 1900.....Catubig, Samar. Detachment Forty-third Infantry, besieged by large force of insurgents. United States loss, 23—19 killed, 4 wounded; insurgent loss, 200 killed.

Apr. 15, 1900.....Jaro, Leyte. Detachment company, Forty-third Infantry, Lieut. C. C. Estes, commanding. Attacked in barracks by insurgents. United States loss, none; insurgent loss, 125 killed.

Apr. 15, 1900.....Cullambang, Ilocos. Troop F, Third Cavalry, Capt. G. A. Dodd, commanding, attacks insurgents' stronghold. United States loss, none; insurgent loss, 97—53 killed, 44 captured.

Apr. 16, 1900.....Batac, near Laoag, Ilocos. Company G, Thirty-fourth Infantry, Capt. C. J. Rollis, commanding, attacked in barracks. United States loss, 5—2 killed, 3 wounded; insurgent loss, 265 killed, wounded, and prisoners.

Apr. 17, 1900.....Laoag, Ilocos. Companies F, G, and H, Thirty-fourth Infantry, Lieut. Col. R. L. Howze, commanding. United States loss, none; insurgent loss, 152 killed, wounded, and prisoners.

Apr. 30, 1900.....Catarman, Samar. Company F, Forty-third Infantry, attacked in station by insurgents. United States loss, 2 wounded; insurgent loss, 154 killed, many wounded.

May 14, 1900.....Misamis, Mindanao. Detachment 25 men, Company C, Fortieth Infantry, Capt. W. McK. Lambdin, commanding. Attacked by 200 insurgents. United States loss, 12 killed and wounded; insurgent loss, 77 killed and wounded.

May 28, 1900.....Labo, province of Camarines. Detachment Forty-fifth Infantry ambushed. Capt. A. Steinhauser, commanding. United States loss, 9—3 killed, 6 wounded; insurgent loss, not reported.

July 4, 1900.....Ponoranda, Gapan, and Maniclin, Luzon. Garrisoned by detachments of Twenty-fourth and Thirty-fourth Infantry. Attacked by insurgents. United States loss, 4—1 killed, 3 wounded; insurgent loss, over 100 killed and wounded.

July 12, 1900.....Oroquieta, Mindanao. Company I, Fortieth Infantry, Lieut. K. C. Masteller, commanding. Garrison attacked by insurgents. United States loss, 3—2 killed, 1 wounded; insurgent loss, 101 killed and wounded.

Sept. 14, 1900.....Torrijos, Mindoro. Company F, Twenty-ninth Infantry, engaged. Capt. Devereux Shields, commanding. United States loss, 60—4 killed, 6 wounded, and 50 captured; insurgent loss, not known.

Sept. 16, 1900.....Navitac, Laguna Province. Company L, Fifteenth Infantry, Company L, Thirty-seventh Infantry, Company K, Fifteenth Infantry. Capt. D. D. Mitchell, Fifteenth Infantry, commanding. United States loss, killed and wounded in ambush, 57; insurgent loss, 10 killed, 20 wounded.

Oct. 14, 1900.....Ormoc, Leyte. Troops engaged, Company D, Forty-fourth Infantry, Lieut. R. W. Buchanan commanding. United States loss, none; insurgent loss, 116 killed, wounded not reported.

Oct. 21, 1900.....Looc, Batangas. Detachment 20 men, Twenty-eighth Infantry, Capt. George W. Biegler commanding, defeated 400 insurgents. United States loss, 6 killed and wounded; insurgent loss, 75 killed and wounded.

Oct. 24, 1900.....Barrio Casucos, Ilocos. Detachments Thirty-third Infantry and Third Cavalry, First Lieut. George L. Febiger commanding, ambushed by 400 riflemen. United States loss, Lieutenant Febiger and 4 men killed, 9 wounded, 5 missing; insurgent loss, 150 killed and wounded.

Oct. 30, 1900.....Bugasan, Panay. Garrisoned by Company E, Nineteenth Infantry, Capt. F. H. French, Nineteenth Infantry, commanding, attacked by insurgents. United States loss, 4 killed and wounded; insurgent loss, 54 killed, 21 wounded, 21 captured.

Isolated engagements, 1901.

June 10, 1901.....Near Lipa. Company D, Forty-fifth Infantry, ambushed by 500 insurgents. Capt. W. H. Wilhelm, commanding. Lieut. A. M. Springer, Twenty-first Infantry, and Lieut. W. H. Lee, Corps of Engineers, killed. United States loss, 6 killed and wounded; insurgent loss, unknown.

Sept. 28, 1901.....Balangiga, Samar. Company C, Ninth Infantry, Capt. Thomas W. Connell, commanding. Attacked by 400 natives. United States loss, 3 officers, 32 men killed, 24 wounded, 8 missing; officers killed, Captain Connell, Lieut. E. A. Bumpus, and Maj. R. S. Griswold, surgeon. Insurgent loss, 140 killed and wounded.

Oct. 16, 1901.....Gandara River. Detachment Company B, Ninth Infantry, ambushed. United States loss, 10 killed, 6 wounded. Insurgent loss, 83 killed.

Isolated engagements, 1902.

May 2, 1902.....Bayan, Mindanao. Twenty-seventh Infantry, Col. F. D. Baldwin, commanding. United States loss, 51; 8 killed, 43 wounded. Moro loss, several hundred killed.

LIST OF OFFICERS KILLED AND DIED OF WOUNDS OR DISEASE, ETC., IN THE PHILIPPINE ISLANDS, TO OCTOBER 1, 1902.

KILLED (54).

Adams, Frank H., first lieutenant, First South Dakota Volunteer Infantry, in action at Marilao, March 27, 1899.

Alford, Alfred C., second lieutenant, Twentieth Kansas Volunteer Infantry, in action near Caloocan, February 7, 1899.

Bean, Robert R., second lieutenant, Philippine Scouts, in action at Mount Malary, October 8, 1901.

Boutelle, Henry M., second lieutenant, Third Artillery, in action near Aliaga, November 2, 1899.

Brown, William, captain, Forty-fifth Infantry, United States Volunteers, in action at Guidiang, August 17, 1900.

Bumpus, Edward A., first lieutenant, Ninth Infantry, in action at Balangiga, September 28, 1901.

Cheney, Ward, first lieutenant, Fourth Infantry, in action at Puente Julien, January 7, 1900.

Connell, Thomas W., captain, Ninth Infantry, in action at Balangiga, September 28, 1901.

Cooper, George A., second lieutenant, Fifteenth Infantry, in action at Mavitac, September 17, 1900.

Crockett, Allen T., second lieutenant, Twenty-first Infantry, in action at Candelaria, September 24, 1901.

Davis, Julian L., second lieutenant, Thirty-sixth Infantry, United States Volunteers, in action at Bamban, November 11, 1899.

Downes, Edward E., first lieutenant, First Infantry, in action near Salcedo, June 23, 1901.

Drew, Alfred W., first lieutenant, Twelfth Infantry, in action near Angeles, August 19, 1899.

Egbert, Harry C., colonel, Twenty-second Infantry, in action at Melinto, March 26, 1899.

Eldridge, Bogardus, captain, Fourteenth Infantry, in action near Bacoor, October 2, 1899.

Elliot, David S., captain, Twentieth Kansas Volunteer Infantry, in action at Caloocan, February 28, 1899.

Evens, John H., first lieutenant, Forty-third Infantry, United States Volunteers, in action near Matignac, May 11, 1900.

Febiger, George L., first lieutenant, Thirty-third Infantry, United States Volunteers, in action near Narbacan, October 24, 1900.

Fortson, George H., captain, First Washington Volunteer Infantry, in action at Pasig, March 26, 1899.

French, Eugene, second lieutenant, First Montana Volunteer Infantry, in action at Caloocan, February 23, 1899.

Godfrey, George J., captain, Twenty-second Infantry, in action at Bulacan Mountain, June 3, 1900.

Gregg, John C., captain, Fourth Infantry, in action in Mariguina Valley, March 31, 1899.

Griswold, Richard, major, surgeon, United States Volunteers, in action at Balangiga, September 28, 1901.

Grubbs, Hayden Y., first lieutenant, Sixth Infantry, in action near Tabuan, October 1, 1899.

Hartshorne, Benjamin M. J., captain, Seventh Infantry, in action near Lanang, January 2, 1902.

Hincken, Elias J., second lieutenant, Forty-fourth Infantry, United States Volunteers, in action near Santa Lucia, January 29, 1901.

Howard, Guy, major, quartermaster, United States Volunteers (captain, quartermaster, U. S. Army), in action at Rio Grande, October 22, 1899.

Keyes, Maxwell, second lieutenant, Third Infantry, in action at San Ildefonso, November 24, 1899.

Koehler, Edgar F., first lieutenant, Ninth Infantry, in action at Barrio Tinuba, March 4, 1900.

Koontz, Howard M., first lieutenant, Forty-fourth Infantry, United States Volunteers, in action at Bugason, October 30, 1900.

Krayenbuhl, Maurice G., captain, commissary of subsistence, United States Volunteers (first lieutenant, Third Artillery), in action at Maycanayan, March 26, 1899.

Lawton, Henry W., major-general, United States Volunteers (colonel, Inspector-General's Department), in action at San Mateo, December 19, 1899.

Ledyard, Augustus C., first lieutenant, Sixth Infantry, in action at La Granja, December 8, 1899.

Lee, Walter H., second lieutenant, Engineer Corps, in action near Lipa, June 10, 1901.

Lien, Jonas S., first lieutenant, First South Dakota Volunteer Infantry, in action at Marilao, March 27, 1899.

Logan, John A., major, Thirty-third Infantry, United States Volunteers, in action at San Jacinto, November 11, 1899.

McConville, Edward, major, First Idaho Volunteer Infantry, in action at San Pedro Macati, February 5, 1899.

McTaggart, William A., second lieutenant, Twentieth Kansas Volunteer Infantry, in action at Santo Tomas, May 4, 1899.

Mitchell, David D., captain, Fifteenth Infantry, in action at Mavitac, September 17, 1900.

Morrison, John, jr., first lieutenant, Fourth Cavalry, in action Rio Corona, January 18, 1901.

Morrison, Sidney E., second lieutenant, Second South Dakota Volunteer Infantry, in action at Marilao, March 27, 1899.

Murphy, William L., captain, Thirty-ninth Infantry, United States Volunteers (first lieutenant, Twenty-fourth Infantry), in action at Barrio Natatas, August 14, 1900.

Pasco, William D., second lieutenant, Eighteenth Infantry, in action near Cuartero, October 29, 1900.

Saffold, Marion B., captain, Thirteenth Infantry, in action at Novaleta, October 8, 1899.

Schenck, William T., first lieutenant, Twenty-fifth Infantry, in action near Castellejos, January 29, 1900.

Sisson, Lester E., second lieutenant, First Nebraska Volunteer Infantry, in action at Quingua, April 23, 1899.

Springer, Anton, captain, First Infantry, in action near Lipa, June 10, 1901.

Stewart, John S., captain, First Colorado Volunteer Infantry, in action at Mariquina road, March 24, 1899.

Stotsenburg, John M., colonel First Nebraska Volunteer Infantry (captain, Sixth Cavalry), in action at Quingua, April 23, 1899.

Tilly, George H., captain, signal officer, United States Volunteers, in action at Escalante, May 27, 1899.

Vicars, Thomas A., first lieutenant, Twenty-seventh Infantry, in action at Bayan, May 2, 1902.

Wagner, Max, second lieutenant, Twenty-sixth Infantry, United States Volunteers, in action near Pavia, October 1, 1900.

Warrick, Oliver B., captain, Eighteenth Infantry, in action at Passi, November 26, 1899.

Way, Henry N., second lieutenant, Fourth Infantry, in action at Villavieja, August 28, 1900.

DIED OF WOUNDS (17).

Bentley, George H., captain, Forty-seventh Infantry, United States Volunteers, August 28, 1900, wounded at Cotman, August 21, 1900.

Crenshaw, Frank F.,[a] captain, Twenty-eighth Infantry, United States Volunteers, August 28, 1900; wounded at Papaya June 5, 1900.

Diggles, Arthur M., captain, Thirteenth Minnesota Volunteer Infantry, May 26, 1899; wounded at Maasin May 8, 1899.

Forby, Lee, captain, First Nebraska Volunteer Infantry, March 28, 1899; wounded at San Francisco del Monte March 25, 1899.

French, Charles, captain, Thirty-sixth Infantry, United States Volunteers, October 31, 1899; wounded at Lubac October 29, 1899.

Galleher, John B., first lieutenant, Fortieth Infantry, United States Volunteers, February 23, 1900; wounded at Libmanan February 20, 1900.

Geary, Woodbridge, captain, Thirteenth Infantry, October 11, 1899; wounded at San Francisco de Malabon October 10, 1899.

Jossman, Albert L., second lieutenant, Twenty-seventh Infantry, July 28, 1902; wounded at Bayan May 2, 1902.

McGrath, Hugh J., captain, Fourth Cavalry, November 7, 1899; wounded at Noveleta October 8, 1899.

Mitchell, James, first lieutenant, Fourteenth Infantry, February 6, 1899; wounded at Pasay February 5, 1899.

Ramsay, Charles R., first lieutenant, Twenty-first Infantry, July 13, 1901; wounded near Lipa June 10, 1901.

Richter, Reinhold,[b] captain, First California Volunteer Infantry, August 4, 1898; wounded near Manila August 1, 1898.

Smith, Charles M., second lieutenant, Eighteenth Infantry, November 22, 1899; wounded near Ilaya November 21, 1899.

Smith, Edmund D., captain, Nineteenth Infantry, February 5, 1900; wounded at Fort Amia February 4, 1900.

Wallace, Robert B.,[a] colonel Thirty-seventh Infantry, United States Volunteers (lieutenant-colonel First Montana Volunteer Infantry; first lieutenant, Second Cavalry), March 13, 1900; wounded at Caloocan February 10, 1899.

Wilhelm, William H., captain, Twenty-first Infantry, June 12, 1901; wounded near Lipa June 10, 1901.

Williams, William H.,[a] first lieutenant, Twelfth Infantry, November 25, 1899; wounded at Angeles August 16, 1899.

[a] Died in the United States.

[b] Died of wounds during the war with Spain.

DIED OF DISEASE, ETC. (74).

Anderson, Robert H., captain, Ninth Infantry, November 7, 1901.
Armstrong, Frank C., major, surgeon, Thirty-second Infantry, United States Volunteers, December 4, 1899.
Belknap, Hugh R., major, Pay Department, November 12, 1901.
Blakeman, Robert, first lieutenant, Forty-ninth Infantry, United States Volunteers, October 3, 1900.
Bowman, Daniel T., first lieutenant, Thirty-seventh Infantry, United States Volunteers, January 9, 1900.
Brereton, John J., lieutenant-colonel Thirty-third Infantry, United States Volunteers (captain, Twenty-fourth Infantry), December 2, 1899.
Carpenter, Charles E., second lieutenant, Eighth Infantry, February 9, 1902.
Cilley, Jonathan, first lieutenant, Forty-third Infantry, United States Volunteers, June 13, 1900.
Collins, Charles L., captain, Twenty-third Infantry, September 7, 1899.
Crawford, Robert T., first lieutenant, First Infantry, October 30, 1901.
Danner, James D., second lieutenant, Twenty-eighth Infantry, United States Volunteers, September 27, 1900.
Davis, John G., major, surgeon, United States Volunteers, November 1, 1900.
Draper, Paul, second lieutenant, Twenty-second Infantry, June 28, 1900.
Drennan, James W., major, First Montana Volunteer Infantry, June 23, 1899.
Edmonston, Raphael A., first lieutenant, assistant surgeon Thirty-fourth Infantry, United States Volunteers, June 2, 1900.
Fernald, Roy L., second lieutenant, Twenty-sixth Infantry, United States Volunteers, September 1, 1900.
Fiscus, William W., jr., first lieutenant, Nineteenth Infantry, January 12, 1902.
Foster, Pierce C., second lieutenant, Third Infantry, May 22, 1899.
Geiger, William C., captain, Philippine Cavalry (first lieutenant, Fourteenth Infantry), July 2, 1900.
Grandy, Luther B., major, surgeon, United States Volunteers, April 12, 1902.
Gurowits, Odon, captain, Eleventh Infantry, January 14, 1902.
Hall, William R., major, surgeon, U. S. Army, April 2, 1901.
Harting, Edwin A., first lieutenant, First South Dakota Volunteer Infantry, February 14, 1899.
Hassaurek, Frank, second lieutenant, Seventeenth Infantry, May 19, 1899.
Higley, Brainard S., jr., first lieutenant, assistant surgeon, U. S. Army, February 3, 1900.
Hollis, Magnus O., captain, Fourth Infantry, November 15, 1899.
Huston, Robert B., captain, Forty-seventh Infantry, United States Volunteers, July 6, 1900.
Jackson, Frederick C., captain, assistant surgeon, United States Volunteers, September 30, 1902.
Jackson, George L., second lieutenant, Forty-seventh Infantry, United States Volunteers, May 21, 1900.
Kennedy, John, second lieutenant, signal officer, United States Volunteers, November 24, 1900.
Langworthy, Samuel R., captain, Thirty-fifth Infantry, United States Volunteers, February 21, 1900.
Lee, Orison P., captain, Forty-fifth Infantry, United States Volunteers, June 10, 1900.
Leland, Lewis J., chaplain, First Tennessee Volunteer Infantry, February 26, 1899.
Luna, Maximiliano, first lieutenant, Thirty-fourth Infantry, United States Volunteers, November 15, 1899.
McClure, Charles, jr., first lieutenant, Thirtieth Infantry, July 1, 1901.
McKinnon, William D., chaplain, U. S. Army, September 25, 1902.
McQuiston, Charles, captain, Fourth Infantry, September 15, 1900.
McVay, Harlan E., captain, assistant surgeon, U. S. Army, January 4, 1899.
Meade, Francis K., first lieutenant, Twenty-first Infantry, September 22, 1900.
Merchant, Bert H., captain, Fifteenth Infantry, April 2, 1902.
Miley, John D., lieutenant-colonel, inspector-general, United States Volunteers (first lieutenant, Second Artillery), September 19, 1899.
Monaghan, William, major, quartermaster, United States Volunteers, April 13, 1901.
Monday, Oscar C., second lieutenant, Philippine Scouts, July 14, 1902.
Moore, John L., first lieutenant, Fifty-first Iowa Volunteer Infantry, July 19, 1899.
Morley, Frank A.,[a] first lieutenant, Thirteenth Minnesota Volunteer Infantry, August 30, 1898.

[a] Died during the war with Spain.

Morse, Joseph B., second lieutenant, Ninth Infantry, August 15, 1899.
Mullay, William H., captain, infantry, unassigned, March 23, 1901.
Orr, John C., captain, assistant surgeon, United States Volunteers, September 12, 1901.
Parker, Montgomery D., captain, Eighth Infantry, December 17, 1900.
Pearce, Fred A., second lieutenant, Sixth Artillery, June 6, 1899.
Pope, Benjamin F., colonel, Assistant Surgeon-General, U. S. Army, February 14, 1902.
Rafferty, William A., colonel Fifth Cavalry, September 13, 1902.
Reeder, Odus J., second lieutenant, Philippine Scouts, December 23, 1901.
Russell, Charles E., captain, Eighth Infantry, May 26, 1902.
Ryan, Thomas, second lieutenant, Philippine Scouts, June 16, 1902.
Shollenberger, John H., captain, Tenth Infantry, July 4, 1902.
Slack, Walter T., first lieutenant, Forty-seventh Infantry, United States Volunteers, December 25, 1900.
Smith, Louis P., first lieutenant, assistant surgeon, U. S. Army, January 8, 1901.
Smith, William C., colonel, First Tennessee Volunteer Infantry, February 5, 1899.
Spurgin, David G., first lieutenant, Twenty-first Infantry, July 29, 1900.
Stuart, Stanley MacC., first lieutenant, assistant surgeon, Eleventh Cavalry, United States Volunteers, November 6, 1900.
Taylor, Edward, first lieutenant, Twelfth Infantry, December 26, 1899.
Thompson, John P., chaplain, First Washington Volunteer Infantry, February 19, 1899.
Toncray, James P., first lieutenant, Thirtieth Infantry, United States Volunteers, February 7, 1900.
Waugh, John R., second lieutenant, Thirty-ninth Infantry, United States Volunteers, February 27, 1900.
Weber, Louis P., second lieutenant, Forty-second Infantry, United States Volunteers, March 9, 1900.
Webster, Horace, first lieutenant, Forty-second Infantry, United States Volunteers, July 7, 1900.
Westnedge, Richard B., first lieutenant, assistant surgeon, U. S. Army, June 10, 1899.
White, Grant A., first lieutenant, Thirty-third Infantry, United States Volunteers, April 10, 1900.
Whiteley, Rowland, first lieutenant, Philippine Scouts, June 21, 1902.
Whitney, Folliot A., major, Sixth Infantry, August 11, 1900.
Williams, James C., second lieutenant, Twelfth Infantry, October 13, 1901.
Wing, Eugene G., second lieutenant, Thirty-sixth Infantry, United States Volunteers, January 24, 1900.
Wood, Palmer G., second lieutenant, Twelfth Infantry, November 16, 1900.

MOVEMENT OF TROOPS.

The following is a summary of the movements of troops from and to extra-territorial stations since September 18, 1901:

Cuba.

1902.

January 18.—Headquarters and Second Squadron, Second Cavalry, sailed from Havana for New York.

February 25.—Headquarters and Third Squadron, Eighth Cavalry, sailed from Nuevitas, en route to Fort Riley, Kans.

March 6.—Third Squadron, Eighth Cavalry, arrived at Fort Riley from Cuba.

April 13.—Troop C, Seventh Cavalry, sailed from Cuba for the United States.

April 17.—Troop D, Seventh Cavalry, sailed from Cuba for the United States.

April 19.—Troops A and B, Seventh Cavalry, and Third Field Battery, sailed from Cuba for the United States.

April 23.—Troops A, C, L, and M, Tenth Cavalry, sailed from Cuba for the United States.

April 24.—Headquarters and First Squadron, Second Cavalry, sailed from Cuba for the United States.

April 26.—Troops F and G, Eighth Cavalry, sailed from Cuba for the United States.

April 30.—Third Squadron, Second Cavalry, sailed from Cuba for the United States.

May 5.—Troops B, D, I, and K, Tenth Cavalry, sailed from Cuba for the United States.

May 20.—General Wood and staff, headquarters, and Second and Third Squadrons, Seventh Cavalry, and Troops E and H, Eighth Cavalry, sailed from Cuba for the United States.

PORTO RICO.

1902.

April 4.—Steamer *Maricibo* sailed from San Juan, P. R., with Second Battalion, Eleventh Infantry, and arrived at Newport News, Va., April 8.

PHILIPPINE ISLANDS.

1901.

September 26.—Transport *Sheridan* arrived at Manila from San Francisco with 14 officers.

September 29.—Transport *Buford* sailed from Zamboanga, P. I., for New York with headquarters and 8 companies Twenty-third Infantry.

October 1.—Transport *Hancock* sailed from San Francisco for Manila with 18 officers and 142 enlisted men. Maj. R. H. Loughborough, Sixth Infantry, commanding.

October 1.—Transport *Meade* sailed from Manila for San Francisco with the Sixtieth, Sixty-first, Sixty-second, Sixty-third, Sixty-fourth, Sixty-fifth, Sixty-eighth, Seventieth, and Seventy-first Companies, Coast Artillery.

October 10.—Transport *Ingalls* arrived at Manila from New York with 4 officers and 26 enlisted men.

October 12.—Transport *Kilpatrick* arrived at San Francisco from Iloilo with headquarters and 8 companies Eighteenth Infantry.

October 14.—Transport *Sumner* arrived at Manila from San Francisco with 5 officers and 2 Hospital Corps men.

October 16.—Transport *Thomas* sailed from San Francisco for Manila with 17 officers and 19 enlisted men. Capt. W. M. Coulling, quartermaster, U. S. Army, commanding.

October 16.—Transport *Warren* arrived at Manila from San Francisco with 9 officers.

October 16.—Transport *Sheridan* sailed from Manila for San Francisco with short-term enlisted men. Vessel disabled and docked for repairs at Nagasaki, Japan, October 22.

October 18.—Transport *McCullan* sailed from Manila for New York with Companies B, C, and D, Engineers.

October 25.—Transport *Hancock* arrived at Manila from San Francisco with 18 officers and 142 enlisted men.

October 26.—Transport *Warren* sailed from Manila to take the sick from the transport *Sheridan* at Nagasaki, Japan; disabled and returned to Manila.

October 28.—Transport *Meade* arrived at San Francisco from Manila with 9 companies coast artillery.

November 1.—Transport *Kilpatrick* sailed from San Francisco for Manila with 15 officers and 139 enlisted men. First Lieut. M. R. Hilgard, Sixteenth Infantry, commanding.

November 12.—Transport *Thomas* arrived at Manila from San Francisco with 17 officers and 19 enlisted men.

November 15.—Transport *Grant* sailed from San Francisco for Manila with headquarters, First and Third Battalions, Twenty-eighth Infantry, recruits, etc., 25 officers and 946 enlisted men. Col. Mott Hooton, Twenty-eighth Infantry, commanding.

November 16.—Transport *Rosecrans* sailed from Portland, Oreg., for Manila with Second Battalion, Twenty-eighth Infantry, and casuals; 10 officers and 460 enlisted men. Capt. F. E. Bamford, Twenty-eighth Infantry, commanding.

November 16.—Transport *Meade* sailed from San Francisco for Manila with 8 officers and 21 enlisted men. Capt. R. McA. Schofield, quartermaster, U. S. Army, commanding.

November 20.—Transport *Thomas* sailed from Manila for San Francisco with discharged, sick, and short-term service men.

December 1.—Transport *Buford* arrived at New York from Manila with headquarters and 8 companies, Twenty-third Infantry.

December 2.—Transport *Kilpatrick* arrived at Manila from San Francisco with 15 officers and 139 enlisted men.

December 5.—Transport *Crook* sailed from New York for Manila with Second Squadron, Eleventh Cavalry; Third Battalion, Twenty-seventh Infantry, and casuals; 29 officers and 784 enlisted men. Lieut. Col. A. G. Hennisee, Eleventh Cavalry, commanding.

December 7.—Transport *Sheridan* arrived at San Francisco from Manila with short-term enlisted men.

December 12.—Transport *Grant* arrived at Manila from San Francisco with 25 officers and 946 enlisted men.

December 12.—Transport *Kilpatrick* sailed from Manila for San Francisco with discharged and short-term enlisted men.

December 16.—Transport *Hancock* sailed from San Francisco for Manila with headquarters, Second and Third Squadrons, Fifteenth Cavalry, and recruits; 31 officers and 982 enlisted men. Col. W. M. Wallace, Fifteenth Cavalry, commanding.

December 19.—Transport *Meade* arrived at Manila from San Francisco with 8 officers and 21 enlisted men.

December 19.—Transport *Thomas* arrived at San Francisco from Manila with discharged, sick, and short-term enlisted men.

December 22.—Transport *Rosecrans* arrived at Manila from Portland, Oreg., with 10 officers and 460 enlisted men.

December 23.—Transport *McClellan* arrived at New York from Manila with Companies B, C, and D, Engineers.

December 24.—Transport *Grant* sailed from Manila for San Francisco with the Fourth Infantry.

1902.

January 1.—Transport *Sheridan* sailed from San Francisco for Manila with headquarters and First Squadron, Eleventh Cavalry; headquarters and First Battalion, Twenty-seventh Infantry, recruits, etc.; 45 officers and 1,502 enlisted men. Col. F. D. Baldwin, Twenty-seventh Infantry, commanding.

January 9.—Transport *Kilpatrick* arrived at San Francisco from Manila with discharged and short-term enlisted men.

January 11.—Transport *Hancock* arrived at Manila from San Francisco with 31 officers and 982 enlisted men.

January 16.—Transport *Kilpatrick* sailed from San Francisco for Manila with recruits, etc. Capt. J. A. Penn, Seventh Infantry, commanding.

January 21.—Transport *Buford* sailed from New York for Manila with headquarters and Third Squadron, Eleventh Cavalry; Second Battalion, Twenty-seventh Infantry; casuals, 44 officers and 798 men. Col. F. Moore, Eleventh Cavalry, commanding.

January 21.—Transport *Grant* arrived at San Francisco from Manila with the Fourth Infantry.

January 24.—Transport *Rosecrans* sailed from Manila for San Francisco with the Third Battalion, Twenty-second Infantry.

January 26.—Transport *Sheridan* arrived at Manila from San Francisco with 45 officers and 1,502 enlisted men.

February 1.—Transport *Thomas* sailed from San Francisco for Manila with 22 officers and 1,513 recruits, etc. Maj. W. Paulding, Third Infantry, commanding.

February 1.—Transport *Hancock* sailed from Manila for San Francisco with headquarters, First and Second Battalions, Twenty-second Infantry.

February 3.—Transport *Crook* arrived at Manila from New York with 29 officers and 784 enlisted men.

February 8.—Transport *Grant* sailed from San Francisco for Manila with 10 officers and 320 recruits, etc. Lieut. Col. C. H. Noble, Sixteenth Infantry, commanding.

February 16.—Transport *Warren* sailed from San Francisco for Manila with Second Battalion, Fifteenth Infantry, and recruits—13 officers and 783 enlisted men. Capt. S. W. Dunning, Fifteenth Infantry, commanding.

February 16.—Transport *Sheridan* sailed from Manila for San Francisco with headquarters, First and Third Battalions, Twentieth Infantry.

February 17.—Transport *Kilpatrick* arrived at Manila from San Francisco with recruits, etc.

February 18.—Transport *Egbert* sailed from Manila for San Francisco with Second Battalion, Twentieth Infantry.

February 25.—Transport *Rosecrans* arrived at San Francisco from Manila with the Third Battalion, Twenty-second Infantry.

February 25.—Transport *Hancock* arrived at San Francisco from Manila with headquarters, First and Second Battalions, Twenty-second Infantry.

March 1.—Transport *Meade* sailed from San Francisco for Manila with 13 officers and 794 recruits, etc., but returned to port March 3 on account of sickness aboard.

March 1.—Transport *Kilpatrick* sailed from Manila for San Francisco with headquarters and Second Battalion, Seventeenth Infantry.

March 3.—Transport *Thomas* arrived at Manila from San Francisco with 22 officers and 1,513 recruits, etc.

March 6.—Transport *Crook* sailed from Manila for San Francisco with Companies B, I, K, and M, Seventeenth Infantry.

March 10.—Transport *Grant* arrived at Manila from San Francisco with 10 officers and 320 recruits.

March 13.—Transport *Sheridan* arrived at San Francisco from Manila with headquarters, First and Third Battalions, Twentieth Infantry.

March 15.—Transport *Hancock* sailed from San Francisco for Manila with headquarters and Second Battalion, Tenth Infantry; recruits, etc.; 23 officers and 812 enlisted men. Col. S. H. Lincoln, Tenth Infantry, commanding.

March 18.—Transport *Thomas* sailed from Manila for San Francisco with the Twenty-third Infantry.

March 19.—Transport *Meade* sailed from San Francisco for Manila with 15 officers and 752 recruits, etc. Lieut. Col. P. H. Ray, Seventh Infantry, commanding.

March 21.—Transport *Buford* arrived at Manila from New York with headquarters, Third Squadron, Eleventh Cavalry, and the Second Battalion, Twenty-seventh Infantry.

March 27.—Transport *Egbert* arrived at San Francisco from Manila with Second Battalion, Twentieth Infantry.

March 31.—Transport *Kilpatrick* arrived at San Francisco from Manila with headquarters and Second Battalion, Seventeenth Infantry.

March 31.—Transport *Grant* sailed from Manila for San Francisco with the Twelfth Infantry.

April 1.—Transport *Sheridan* sailed from San Francisco for Manila with the Twenty-ninth Infantry, recruits, etc.; 48 officers and 1,652 enlisted men; also 7 officers and 149 men, Marine Corps. Lieut. Col. T. F. Forbes, Twenty-ninth Infantry, commanding.

April 2.—Transport *Crook* arrived at San Francisco from Manila with Companies B, I, K, and M, Seventeenth Infantry.

April 2.—Transport *Warren* arrived at Manila from San Francisco with Second Battalion, Fifteenth Infantry, recruits, etc.

April 12.—Transport *Kilpatrick* sailed from San Francisco for Manila with 15 officers and 127 enlisted men. Maj. Z. W. Torrey, Twenty-fourth Infantry, commanding.

April 13.—Transport *Hancock* arrived at Manila from San Francisco with headquarters and Second Battalion, Tenth Infantry.

April 15.—Transport *Thomas* arrived at San Francisco from Manila with the Third Infantry.

April 16.—Transport *Sherman* sailed from San Francisco for Manilawith First Battalion, Second Infantry, recruits, etc.—51 officers and 514 enlisted men—also 6 officers and 100 men, Marine Corps; Capt. T. H. Wilson, Second Infantry, commanding.

April 21.—Transport *Meade* arrived at Manila from San Francisco with 15 officers and 752 recruits.

April 21.—Transport *Crook* sailed from San Francisco for Manila with Second Battalion, Eleventh Infantry, recruits, etc.—22 officers and 454 enlisted men—Maj. J. B. Jackson, Eleventh Infantry, commanding.

April 22.—Transport *Buford* sailed from Manila for San Francisco with headquarters and Troops E and F, Third Cavalry.

April 26.—Transport *Grant* arrived at San Francisco from Manila with the Twelfth Infantry.

May 1.—Transport *Sheridan* arrived at Manila from San Francisco with the Twenty-ninth Infantry.

May 1.—Transport *Logan* sailed from San Francisco for Manila with 41 officers and 83 enlisted men, First Lieut. H. Olin, Thirtieth Infantry, commanding.

May 6.—Transport *Meade* sailed from Batangas for San Francisco with the Twenty-first Infantry.

May 11.—Transport *Kilpatrick* arrived at Manila from San Francisco with 15 officers and 127 recruits.

May 12.—Transport *Sherman* arrived at Manila from San Francisco with the First Battalion, Second Infantry, recruits, etc.

May 14.—Transport *Warren* sailed from Manila for San Francisco with Company I, Ninth Infantry.

May 16.—Transport *Thomas* sailed from San Francisco for Manila with 13 officers and 92 enlisted men, Capt. J. Howard, Nineteenth Infantry, commanding.

May 20.—Transport *Crook* arrived at Manila from San Francisco with the Second Battalion, Eleventh Infantry, recruits, etc.

May 21.—Transport *Kilpatrick* sailed from Manila for San Francisco with Troops G and H, Third Cavalry, casuals, and marines.

May 23.—Transport *Buford* arrived at San Francisco from Manila with headquarters and Troops E and F, Third Cavalry.

May 26.—Transport *Logan* arrived at Manila from San Francisco with 41 officers and 83 recruits.

May 27.—Transport *Hancock* sailed from Manila for San Francisco with headquarters and 10 companies, Ninth Infantry.

May 28.—Transport *Sherman* sailed from Manila for San Francisco with Generals Wheaton, Snyder, and the Sixth and Nineteenth Infantry.

June 1.—Transport *Meade* arrived at San Francisco from Manila with the Twenty-first Infantry.

June 2.—Transport *Buford* sailed from San Francisco for Manila with 13 officers and 70 recruits, casuals, etc. Capt. E. C. Carey, Thirtieth Infantry, commanding.

June 9.—Transport *Thomas* arrived at Manila from San Francisco with 13 officers and 92 recruits, etc.

June 12.—Transport *Warren* arrived at San Francisco from Manila with Company I, Ninth Infantry.

June 12.—Transport *Logan* sailed from Aparri for San Francisco with Companies C, D, H, and M, Seventh Infantry, and A, C, D, E, F, I, K, and L, Sixteenth Infantry.

June 16.—Transport *Meade* sailed from San Francisco for Manila with 5 officers and 84 enlisted men. Second Lieut. W. J. O'Loughlin, Second Infantry, commanding.

June 19.—Transport *Kilpatrick* arrived at San Francisco from Manila with Troops G and H, Third Cavalry, casuals, and marines.

June 20.—Transport *Hancock* arrived at San Francisco from Manila with 10 companies Ninth Infantry.

June 21.—Transport *Sherman* arrived at San Francisco from Manila with the Sixth and Nineteenth Infantry.

June 22.—Transport *Sheridan* sailed from Manila for San Francisco with the Thirteenth Infantry and the First Squadron, Third Cavalry.

June 25.—Transport *Sumner* sailed from Manila for San Francisco with Companies A, C, D, and L, Seventeenth Infantry, and Companies C, D, K, and M, Twenty-fourth Infantry.

July 1.—Transport *Kilpatrick* sailed from San Francisco for Manila with the Second Squadron, Fifth Cavalry, and men of the Hospital Corps; 17 officers and 350 enlisted men. Col. C. G. Penney, Twenty-ninth Infantry, commanding.

July 4.—Transport *Buford* arrived at Manila from San Francisco with 13 officers and 70 enlisted men.

July 6.—Transport *Thomas* sailed from Manila for San Francisco with the Second Squadron, Tenth Cavalry; headquarters and Companies A, B, E, F, G, H, and I, Twenty-fourth Infantry, and the First Battalion, Twenty-fifth Infantry.

July 8.—Transport *Logan* arrived at San Francisco from Manila with 4 companies Seventh Infantry and 8 companies Tenth Infantry.

July 11.—Transport *Lawton* sailed from Aparri for San Francisco with Third Squadron, Third Cavalry, and Companies B, G, H, and M, Sixteenth Infantry.

July 16.—Transport *Meade* arrived at Manila from San Francisco with 5 officers and 84 enlisted men.

July 16.—Transport *Sherman* sailed from San Francisco for Manila with 16 officers and 84 recruits and casuals. Lieut. Col. S. R. Whitall, Twenty-seventh Infantry, commanding.

July 17.—Transport *Crook* sailed from Manila for San Francisco with headquarters and Companies E, F, H, I, K, L, and M, Twenty-fifth Infantry.

July 19. Transport *Sheridan* arrived at San Francisco from Manila with the First Squadron, Third Cavalry, and the Thirteenth Infantry.

July 22.—Transport *Sumner* arrived at San Francisco from Manila with 4 companies Seventeenth Infantry and 4 companies Twenty-fourth Infantry.

July 29.—Transport *Kilpatrick* arrived at Manila from San Francisco with the Second Squadron, Fifth Cavalry, and Hospital Corps men.

July 29.—Transport *Buford* sailed from Manila for San Francisco with headquarters Second and Third Battalions, Eighth Infantry; Companies E and F, Fifteenth Infantry, and Company G, Twenty-fifth Infantry. Col. W. E. Dougherty, Eighth Infantry, commanding.

August 1.—Transport *Thomas* arrived at San Francisco from Manila with headquarters and 7 companies Twenty-fourth Infantry, First Battalion, Twenty-fifth Infantry, and the Second Squadron, Tenth Cavalry.

August 8.—Transport *Meade* sailed from Manila for San Francisco with headquarters and Companies A, B, C, D, G, H, I, K, L, and M, Fifteenth Infantry, 35 officers and 870 men. Col. H. C. Ward, Fifteenth Infantry, commanding.

August 12.—Transport *Lawton* arrived at San Francisco from Manila with 4 companies Sixteenth Infantry and Third Squadron, Third Cavalry.

August 13.—Transport *Crook* arrived at San Francisco from Manila with headquarters and 7 companies Twenty-fifth Infantry.

August 17.—Transport *Kilpatrick* sailed from Manila for San Francisco with 34 officers and 318 enlisted men.

September 1.—Transport *Sheridan* sailed from San Francisco for Manila with 18 officers and 61 enlisted men—Hospital Corps, recruits, and casuals.

September 4.—Transport *Sherman* sailed from Manila for San Francisco with 45 officers and 273 sick, casuals, and discharged, enlisted men; detained at Nagasaki, Japan, until September 20 on account of sickness aboard.

September 6.—Transport *Buford* arrived at San Francisco from Manila, with headquarters, Second and Third Battalions, Eighth Infantry; Companies E and F, Fifteenth Infantry, and Company G, Twenty-fifth Infantry.

September 11.—Transport *Meade* arrived at San Francisco with headquarters and 10 companies, Fifteenth Infantry.

September 14.—Transport *Kilpatrick* arrived at San Francisco from Manila with 34 officers and 318 sick, discharged, and short-term, enlisted men.

September 16.—Transport *Crook* sailed from San Francisco for Manila with 15 officers and 20 enlisted men.

September 16.—Transport *Logan* sailed from Manila for San Francisco with headquarters and Troops F, G, H, K, L, and M, Ninth Cavalry—19 officers and 569 enlisted men—Brigadier-General Grant and 21 officers, 3 contract surgeons, and 360 Hospital Corps, sick, etc., enlisted men.

September 20.—Transport *Sherman* sailed from Nagasaki, Japan, for San Francisco (For troops on board, see entry of September 4.)

October 1.—Transport *Thomas* sailed from San Francisco for Manila, via Honolulu and Guam, with Lieutenant-General Miles and 24 officers, 1 dental surgeon, 27 Hospital Corps men, 4 Signal Corps men, and 29 casuals.

October 6.—Transport *Sheridan* sailed from Manila for San Francisco with Troops A, B, C, D, E, and I, Ninth Cavalry—503 enlisted men—432 casuals, sick, etc., enlisted men.

October 13.—Transport *Logan* arrived at San Francisco from Manila with headquarters and 6 troops, Ninth Cavalry; Brigadier-General Grant and 21 officers, 3 contract surgeons, and 360 Hospital Corps, sick, etc., enlisted men.

The insular service of all the organizations of the Army in Cuba, Porto Rico, and the Philippines, from June, 1898, to October 1, 1902, with dates of departure from, and return to, the United States, is shown in the following table:

Organization.	Cuba.		Porto Rico.		Philippines.		Total insular service.	
	Departure.	Return.	Departure.	Return.	Departure.	Return.		
First Battalion Engineers.							Yrs.	M.
Company A					June 26, 98	Aug. 18, 01	3	2
Company B					July 13, 99	Dec. 23, 01	2	5
Company C	June 14, 98	Aug. 28, 98			Aug. 1, 00	do	1	7
Company D[a]					Feb. 26, 01	do		10
Second Battalion Engineers.								
Company E	June 14, 98	Aug. 28, 98			June 25, 01		1	6
Company F					do		1	3
Company G					do		1	3
Company H					do		1	3
First Cavalry.								
Headquarters	June 14, 98	Aug. 15, 98			Aug. 7, 00		2	4
Troop A	do	do			do		2	4
Troop B	do	do			do		2	4
Troop C	do	do			do		2	4
Troop D	do	do			do		2	4
Troop E	do	do			Aug. 16, 02			4

[a] Organized in Philippine Islands, March, 1901.

Organization.	Cuba.		Porto Rico.		Philippines.		Total insular service.	
	Departure.	Return.	Departure.	Return.	Departure.	Return.		
First Cavalry—Con.							Yrs.	M.
Troop F					Aug. 16, 02			1
Troop G	June 14, 98	Aug. 15, 98			do			4
Troop H					do			1
Troop I	June 14, 98	Aug. 15, 98			Aug. 7, 00		2	4
Troop K	do	do			do		2	4
Troop L					do		2	2
Troop M					do		2	2
Second Cavalry.								
Headquarters	Feb. 16, 99	Apr. 28, 02					3	3
Troop A	June 14, 98	Aug. 28, 98					3	3
	Feb. 3, 99	Apr. 28, 02						
Troop B	Feb. 16, 99	do	July 23, 98	Dec. 1, 98			3	7
Troop C	June 14, 98	Aug. 28, 98					3	4
	Feb. 3, 99	Apr. 28, 02						
Troop D	June 14, 98	Aug. 28, 98					3	5
	Feb. 3, 99	Apr. 28, 02						
Troop E	Feb. 16, 99	Jan. 22, 02					2	11
Troop F	June 14, 98	Aug. 28, 98					3	2
	Feb. 3, 99	Jan. 22, 02						
Troop G	do	do					3	0
Troop H	Feb. 16, 99	do					2	11
Troop I	do	May 9, 02					3	3
Troop K	do	do					3	3
Troop L	do	do					3	3
Troop M	Feb. 3, 99	do					3	3
Third Cavalry.								
Headquarters	June 14, 98	Aug. 14, 98			Aug. 25, 99	May 23, 02	2	11
Troop A					do	July 19, 02	2	11
Troop B	June 14, 98	Aug. 13, 98			Aug. 1, 00	do	2	2
Troop C	do	Aug. 14, 98			Aug. 25, 99	do	3	1
Troop D					do	do	2	11
Troop E	June 14, 98	Aug. 14, 98			do	May 23, 02	2	11
Troop F	do	do			do	do	2	11
Troop G	do	Aug. 13, 98			Aug. 1, 00	June 19, 02	2	1
Troop H	do	do			do	do	2	1
Troop I	do	do			do	Aug. 12, 02	2	2
Troop K	do	Aug. 14, 98			Aug. 25, 99	do	3	2
Troop L					do	do	3	2
Troop M					do	do	3	2
Fourth Cavalry.								
Headquarters					June 28, 99	Aug. 28, 01	2	2
Troop A					June 24, 99	do	2	2
Troop B					June 28, 99	Sept. 18, 01	2	3
Troop C					July 15, 98	Aug. 28, 01	3	1
Troop D					July 13, 99	do	2	2
Troop E					July 15, 98	do	3	1
Troop F					June 24, 99	do	2	2
Troop G					July 15, 98	do	3	1
Troop H					July 13, 99	do	2	2
Troop I					July 15, 98	do	3	1
Troop K					do	do	3	1
Troop L					do	do	3	1
Troop M					June 28, 99	do	2	2
Fifth Cavalry.								
Headquarters			Nov. 9, 98	Aug. 11, 00	Mar. 18, 01		3	4
Troop A			July 25, 98	Mar. 29, 00	do		3	2
Troop B			Nov. 9, 98	do	do		2	11
Troop C			Feb. 1, 99	do	do		2	8
Troop D			Nov. 9, 98	do	do		2	11
Troop E			do	Dec. 4, 00	July 1, 02		3	4
Troop F			Feb. 1, 99	Dec. 21, 00	do		2	2
Troop G			Nov. 9, 98	Dec. 4, 00	do		2	4
Troop H			Feb. 1, 99	Dec. 21, 00	do		2	2
Troop I			do	Aug. 11, 00	Mar. 18, 01		3	1
Troop K			Nov. 9, 98	do	do		3	4
Troop L			do	do	do		3	4
Troop M			Feb. 1, 99	do	do		3	1
Sixth Cavalry.								
Headquarters	June 14, 98	Aug. 13, 98			July 3, 00		2	5
Troop A	do	do			do		2	5
Troop B	do	do			do		2	5

Organization.	Cuba.		Porto Rico.		Philippines.		Total insular service.	
	Departure.	Return.	Departure.	Return.	Departure.	Return.		
Sixth Cavalry—Con.							Yrs.	M.
Troop C	June 14, 98	Aug. 13, 98			July 3, 00		2	5
Troop D	do	do			do		2	5
Troop E	do	do			Mar. 25, 01		1	8
Troop F	do	do			do		1	8
Troop G	do	do			do		1	8
Troop H			July 28, 98	Dec. 1, 98	do		1	10
Troop I					July 3, 00		2	3
Troop K	June 14, 98	Aug. 13, 98			do		2	5
Troop L					do		2	5
Troop M					do		2	5
Seventh Cavalry.								
Headquarters	Jan. 13, 99	May 22, 02					3	4
Troop A	do	Apr. 22, 02					3	3
Troop B	do	do					3	3
Troop C	do	Apr. 17, 02					3	3
Troop D	do	Apr. 21, 02					3	3
Troop E	do	May 22, 02					3	4
Troop F	do	do					3	4
Troop G	do	do					3	4
Troop H	do	do					3	4
Troop I	do	do					3	4
Troop K	do	do					3	4
Troop L	do	do					3	4
Troop M	do	do					3	4
Eighth Cavalry.								
Headquarters	Nov. 13, 98	Mar. 2, 02					3	4
Troop A	do	Jan. 23, 00					1	2
Troop B	do	do					1	2
Troop C	do	do					1	2
Troop D	Jan. 31, 99	do					1	
Troop E	do	May 26, 02					3	4
Troop F	do	Apr. 30, 02					3	3
Troop G	Nov. 13, 98	do					3	5
Troop H	Jan. 31, 99	May 26, 02					3	4
Troop I	Nov. 13, 98	Mar. 2, 02					3	4
Troop K	Jan. 31, 99	do					3	1
Troop L	do	do					3	1
Troop M	Nov. 13, 98	do					3	4
Ninth Cavalry.[a]								
Headquarters	June 14, 98	Aug. 20, 98			Aug. 16, 00		2	4
Troop A	do	do			do		2	4
Troop B	do	do			do		2	4
Troop C	do	do			do		2	4
Troop D	do	do			do		2	4
Troop E	do	do			do		2	4
Troop F					do		2	2
Troop G	June 14, 98	Aug. 20, 98			do		2	4
Troop H	do	do			do		2	4
Troop I					Apr. 15, 01		1	6
Troop K	June 14, 98	Aug. 20, 98			do		1	8
Troop L					do		1	6
Troop M					do		1	6
Tenth Cavalry.								
Headquarters	June 14, 98	Aug. 20, 98					3	2
	May 1, 99	Apr. 30, 02						
Troop A	June 14, 98	Aug. 20, 98					3	2
	May 1, 99	Apr. 30, 02						
Troop B	June 14, 98	Aug. 20, 98					3	2
	May 17, 99	May 12, 02						
Troop C	June 14, 98	Aug. 20, 98					3	2
	May 1, 99	Apr. 30, 02						
Troop D	June 14, 98	Aug. 20, 98					3	2
	May 17, 99	May 12, 02						
Troop E	June 14, 98	Aug. 20, 98			Apr. 15, 01	Aug. 1, 02	2	2
	May 17, 99	Jan. 10, 00						
Troop F	June 14, 98	Aug. 20, 98			Apr. 15, 01	Aug. 1, 02	2	2
	May 17, 99	Jan. 10, 00						
Troop G	June 14, 98	Aug. 20, 98			Apr. 15, 01	Aug. 1, 02	2	2
	May 1, 99	Jan. 10, 00						
Troop H	do	do			Apr. 15, 01	Aug. 1, 02	2	0

[a] The headquarters and F, G, H, K, L, and M, Ninth Cavalry, arrived at San Francisco from Manila October 13, 1902. The remaining six troops of the regiment sailed from Manila for San Francisco October 4, and are expected to arrive there about November 1, 1902.

Organization.	Cuba.		Porto Rico.		Philippines.		Total insular service.	
	Departure.	Return.	Departure.	Return.	Departure.	Return.		
Tenth Cavalry—Continued.							*Yrs.*	*M.*
Troop I	June 14, 98	Aug. 20, 98					3	2
	May 17, 99	May 12, 02						
Troop K	....do....	....do....					3	0
Troop L	May 1, 99	Apr. 30, 02					3	0
Troop M	....do....	....do....					3	0
Eleventh Cavalry.								
Headquarters					Jan. 21, 02			8
Troop A					Jan. 1, 02			9
Troop B					....do....			9
Troop C					....do....			9
Troop D					....do....			9
Troop E					Dec. 5, 01			10
Troop F					....do....			10
Troop G					....do....			10
Troop H					....do....			10
Troop I					Jan. 21, 02			8
Troop K					....do....			8
Troop L					....do....			8
Troop M					....do....			8
Fifteenth Cavalry.								
Headquarters					Dec. 16, 01			10
Troop A					Mar. 18, 01		1	6
Troop B					....do....		1	6
Troop C					Apr. 1, 01		1	6
Troop D					....do....		1	6
Troop E					Dec. 16, 01			10
Troop F					....do....			10
Troop G					Apr. 5, 01		1	6
Troop H					Dec. 16, 01			10
Troop I					....do....			10
Troop K					....do....			10
Troop L					....do....			10
Troop M					....do....			10
Artillery Corps, Field Batteries.								
1st Battery	June 14, 98	Aug. 25, 98			Apr. 18, 99	July 16, 01	2	5
2d Battery	....do....	Aug. 30, 98						3
3d Battery	....do....	....do....					3	6
	Jan. 21, 99	Apr. 22, 02						
4th Battery	June 14, 98	Aug. 23, 98					1	9
	Jan. 21, 99	Aug. 12, 00						
5th Battery			July 3, 98	Dec. 1, 98				5
6th Battery			....do....	....do....				5
7th Battery			....do....	....do....				5
8th Battery	July 3, 98	Aug. 30, 98			Apr. 20, 99	July 28, 01	2	5
9th Battery			July 3, 98	Dec. 1, 98				5
10th Battery	July 3, 98	Aug. 30, 98			Apr. 20, 99	June 29, 01	2	4
12th Battery					July 14, 98	Sept. 18, 01	3	2
13th Battery					July 20, 98	....do....	3	2
14th Battery			July 23, 98	June 27, 99	Sept. 3, 00		3	0
15th Battery			....do....	....do....	....do....		3	0
25th Battery[a]					Sept. 26, 01		1	0
Artillery Corps, Coast.								
13th Company	Dec. 29, 98	Oct. 18, 99						10
14th Company	....do....	....do....						10
15th Company	Jan. 21, 99	....do....						9
16th Company	Dec. 29, 98	....do....						10
17th Company	Jan. 21, 99						3	8
18th Company	Jan. 11, 99						3	9
19th Company	....do....						3	9
20th Company	Dec. 29, 98						3	9
21st Company	....do....						3	9
22d Company	....do....						3	9
23d Company	Oct. 22, 99						2	11
24th Company	....do....						2	11
25th Company					July 29, 00		2	2
27th Company					....do....		2	2
29th Company					June 27, 98	July 16, 01	3	1
30th Company					June 29, 98	....do....	3	1
31st Company					July 29, 00		2	2

[a] Organized in Philippine Islands.

Organization.	Cuba.		Porto Rico.		Philippines.		Total insular service.	
	Departure.	Return.	Departure.	Return.	Departure.	Return.		
Artillery Corps, Coast—Cont'd.							Yrs.	M.
32d Company					June 29, 98	July 16, 01	3	1
33d Company					June 27, 98	....do....	3	1
36th Company					July 29, 00		2	2
41st Company	June 14, 98	Aug. 22, 98						2
42d Company	....do....	Aug. 15, 98						2
50th Company			July 16, 98	June 27, 99				11
52d Company			Mar. 1, 99	Dec. 3, 00			1	9
53d Company			Aug. 3, 98	....do....			2	4
56th Company			Nov. 14, 00				1	11
59th Company			....do....				1	11
60th Company					Nov. 29, 99	Oct. 28, 01	1	11
61st Company					Apr. 20, 99	....do....	2	6
62d Company					....do....	....do....	2	6
63d Company					....do....	....do....	2	6
64th Company					....do....	....do....	2	6
65th Company					....do....	....do....	2	6
68th Company					....do....	....do....	2	6
69th Company					....do....	June 9, 00	1	2
70th Company [a]					Nov. 29, 99	Oct. 28, 01	1	11
71st Company					Apr. 20, 99	....do....	2	6
First Infantry.								
Headquarters	June 14, 98	Aug. 28, 98			Sept. 1, 00		3	11
	Dec. 30, 98	Aug. 12, 00						
Company A	June 14, 98	Aug. 28, 98			Sept. 1, 00		3	0
	Dec. 30, 98	Sept. 19, 99						
Company B	June 14, 98	Aug. 28, 98			Sept. 1, 00		3	0
	Dec. 29, 98	Sept. 19, 99						
Company C	June 14, 98	Aug. 28, 98			Sept. 1, 00		3	0
	Jan. 8, 99	Sept. 19, 99						
Company D	June 14, 98	Aug. 28, 98			Sept. 1, 00		3	0
	Dec. 30, 98	Sept. 19, 99						
Company E	May 10, 98	May 16, 98			Sept. 1, 00		3	10
	June 14, 98	Aug. 28, 98						
	Jan. 8, 99	Aug. 12, 00						
Company F	June 14, 98	Aug. 28, 98			Sept. 1, 00		3	10
	Dec. 30, 98	Aug. 12, 00						
Company G	May 10, 98	May 16, 98			Sept. 1, 00		3	10
	June 14, 98	Aug. 28, 98						
	Jan. 8, 99	Aug. 12, 00						
Company H	June 14, 98	Aug. 28, 98			Sept. 1, 00		3	10
	Dec. 29, 98	Aug. 12, 00						
Company I	....do....	Sept. 6, 00			Apr. 15, 01		3	2
Company K	Jan. 8, 99	Aug. 7, 00			Apr. 5, 01		3	1
Company L	Dec. 30, 98	....do....			....do....		3	1
Company M	Dec. 29, 98	....do....			Apr. 15, 01		3	1
Second Infantry.								
Headquarters	June 14, 98	Aug. 15, 98			Sept. 1, 00		3	6
	Apr. 12, 99	July 24, 00						
Company A	June 14, 98	Aug. 15, 98			Apr. 16, 02		1	11
	Apr. 12, 99	July 24, 00						
Company B	June 14, 98	Aug. 15, 98			Apr. 16, 02		1	11
	Apr. 12, 99	July 24, 00						
Company C	June 14, 98	Aug. 15, 98			Apr. 16, 02		1	11
	Apr. 12, 99	July 24, 00						
Company D	June 14, 98	Aug. 15, 98			Apr. 16, 02		1	11
	Apr. 12, 99	July 24, 00						
Company E	June 14, 98	Aug. 15, 98			Aug. 21, 00		2	9
	Apr. 12, 99	Sept. 25, 99						
Company F	June 14, 98	Aug. 15, 98			Aug. 21, 00		2	9
	Apr. 12, 99	Sept. 25, 99						
Company G	June 14, 98	Aug. 15, 98			Aug. 21, 00		2	9
	Apr. 12, 99	Sept. 25, 99						
Company H	June 14, 98	Aug. 15, 98			Aug. 21, 00		2	9
	Apr. 12, 99	Sept. 25, 99						
Company I	May 25, 99	July 24, 00			Sept. 1, 00		3	3
Company K	....do....	....do....			....do....		3	3
Company L	....do....	....do....			....do....		3	3
Company M	....do....	....do....			....do....		3	3
Third Infantry.								
Headquarters	June 14, 98	Aug. 25, 98			Feb. 3, 99	Apr. 15, 02	3	5
Company A	....do....	....do....			....do....	....do....	3	5
Company B	....do....	....do....			....do....	....do....	3	5
Company C	....do....	....do....			....do....	....do....	3	5
Company D	....do....	....do....			....do....	....do....	3	5
Company E	....do....	....do....			....do....	....do....	3	5

[a] The 66th and 70th Companies, Coast Artillery, served at Honolulu April 12 to November 29, 1899. The 66th and 67th Companies, Coast Artillery, have been stationed in Honolulu since April 12, 1899.

Organization.	Cuba.		Porto Rico.		Philippines.		Total insular service.	
	Departure.	Return.	Departure.	Return.	Departure.	Return.		
Third Infantry—Continued.							*Yrs.*	*M.*
Company F	June 14, 98	Aug. 25, 98			Feb. 3, 99	Apr. 15, 02	3	5
Company G	do	do			do	do	3	5
Company H	do	do			do	do	3	5
Company I					do	do	3	2
Company K					do	do	3	2
Company L					do	do	3	2
Company M					do	do	3	2
Fourth Infantry.								
Headquarters	June 14, 98	Aug. 19, 98			Jan. 1, 99	Jan. 21, 02	3	2
Company A	do	do			do	do	3	2
Company B	do	do			do	do	3	2
Company C	do	do			do	do	3	2
Company D	do	do			do	do	3	2
Company E	do	do			do	do	3	2
Company F	do	do			do	do	3	2
Company G	do	do			do	do	3	2
Company H	do	do			do	do	3	2
Company I					do	do	3	0
Company K					do	do	3	0
Company L					do	do	3	0
Company M					do	do	3	0
Fifth Infantry.								
Headquarters	Aug. 21, 98	July 25, 00			Sept. 18, 00		4	0
Company A	do	do			do		4	0
Company B	do	Aug. 9, 00			do		4	0
Company C	do	July 25, 00			do		4	0
Company D	do	Aug. 9, 00			do		4	0
Company E	do	do			Apr. 1, 01		3	6
Company F	do	July 25, 00			do		3	5
Company G	do	do			do		3	5
Company H	do	Aug. 9, 00			do		3	6
Company I	do	Sept. 27, 99			Aug. 21, 00		3	3
Company K	do	do			do		3	3
Company L	do	do			do		3	3
Company M	do	do			do		3	3
Sixth Infantry.								
Headquarters	June 14, 98	Aug. 14, 98			May 22, 99	June 21, 02	3	3
Company A	do	do			do	do	3	3
Company B	do	do			do	do	3	3
Company C	do	do			do	do	3	3
Company D	do	do			do	do	3	3
Company E	do	do			do	do	3	3
Company F	do	do			do	do	3	3
Company G	do	do			do	do	3	3
Company H	do	do			do	do	3	3
Company I					do	do	3	1
Company K					do	do	3	1
Company L					do	do	3	1
Company M					do	do	3	1
Seventh Infantry.								
Headquarters	June 14, 98	Aug. 27, 98						2
Company A	do	do						2
Company B	do	do						2
Company C	do	do			Mar. 25, 01	July 8, 02	1	6
Company D	do	do			do	do	1	6
Company E	do	do						2
Company F	do	do						2
Company G	do	do						2
Company H	do	do			Mar. 25, 01	July 8, 02	1	6
Company I	do	do						2
Company K								
Company L								
Company M					Mar. 25, 01	July 8, 02	1	3
Eighth Infantry.								
Headquarters	June 14, 98 Dec. 13, 98	Aug. 20, 98 July 24, 00			Sept. 18, 00	Sept. 6, 02	3	9
Company A	June 14, 98 Dec. 13, 98	Aug. 20, 98 July 24, 00					1	10
Company B	June 14, 98 Dec. 13, 98	Aug. 20, 98 July 24, 00					1	10

Organization.	Cuba.		Porto Rico.		Philippines.		Total insular service.
	Departure.	Return.	Departure.	Return.	Departure.	Return.	
Eighth Infantry—Continued.							Yrs. M.
Company C	June 14, 98	Aug. 20, 98					1 10
	Dec. 13, 98	July 24, 00					
Company D	June 14, 98	Aug. 20, 98					1 10
	Dec. 13, 98	July 24, 00					
Company E	June 14, 98	Aug. 20, 98			Sept. 18, 00	Sept. 6, 02	3 9
	Dec. 13, 98	July 21, 00					
Company F			July 28, 98	Dec. 1, 98	Sept. 18, 00	Sept. 6, 02	3 11
	Dec. 13, 98	July 21, 00					
Company G	June 14, 98	Aug. 20, 98			Sept. 18, 00	Sept. 6, 02	3 9
	Dec. 13, 98	July 24, 00					
Company H	June 14, 98	Aug. 20, 98			Sept. 18, 00	Sept. 6, 02	3 9
	Dec. 13, 98	July 24, 00					
Company I	....do....	Sept. 19, 99			Aug. 21, 00	Sept. 6, 02	2 10
Company K	....do....	....do....			....do....	....do....	2 10
Company L	....do....	....do....			....do....	....do....	2 10
Company M	....do....	....do....			....do....	....do....	2 10
Ninth Infantry.							
Headquarters	June 14, 98	Aug. 14, 98			Mar. 24, 99	June 20, 02	3 5
Company A	....do....	....do....			....do....	....do....	3 5
Company B[a]	....do....	....do....			Mar. 28, 99		3 8
Company C	....do....	....do....			....do....	June 20, 02	3 5
Company D	....do....	....do....			....do....	....do....	3 5
Company E	....do....	....do....			....do....	....do....	3 5
Company F	....do....	....do....			Mar. 24, 99	....do....	3 5
Company G	....do....	....do....			....do....	....do....	3 5
Company H	....do....	....do....			Mar. 28, 99	....do....	3 5
Company I					Mar. 24, 99	June 12, 02	3 3
Company K					Mar. 28, 99	June 20, 02	3 3
Company L					Mar. 24, 99	....do....	3 3
Company M					....do....	....do....	3 3
Tenth Infantry.							
Headquarters	June 14, 98	Aug. 16, 98			Mar. 15, 02		2 11
	Dec. 11, 98	Feb. 28, 01					
Company A	June 14, 98	Aug. 16, 98			Apr. 5, 01		3 10
	Dec. 22, 98	Feb. 17, 01					
Company B	June 14, 98	Aug. 16, 98			Mar. 18, 01		3 11
	Dec. 11, 98	Feb. 17, 01					
Company C	June 14, 98	Aug. 16, 98			Mar. 18, 01		3 11
	Dec. 17, 98	Feb. 17, 01					
Company D	June 14, 98	Aug. 16, 98			Mar. 15, 01		3 11
	Dec. 17, 98	Feb. 17, 01					
Company E	June 14, 98	Aug. 16, 98			Mar. 15, 02		2 11
	Dec. 11, 98	Feb. 28, 01					
Company F	June 14, 98	Aug. 16, 98			Mar. 15, 02		2 11
	Dec. 11, 98	Feb. 28, 01					
Company G	June 14, 98	Aug. 16, 98			Mar. 15, 02		2 11
	Dec. 11, 98	Feb. 28, 01					
Company H	June 14, 98	Aug. 16, 98			Mar. 15, 02		2 11
	Dec. 23, 98	Feb. 28, 01					
Company I	....do....	Sept. 25, 99			Mar. 18, 01		2 4
Company K	Dec. 17, 98	....do....			....do....		2 4
Company L	....do....	....do....			....do....		2 4
Company M	Dec. 23, 98	....do....			....do....		2 4
Eleventh Infantry.							
Headquarters			July 23, 98	Dec. 5, 00	Apr. 5, 01		3 10
Company A			July 22, 98	Aug. 12, 00	Apr. 15, 01		3 6
Company B			July 23, 98	....do....	....do....		3 6
Company C			July 22, 98	....do....	....do....		3 6
Company D			July 23, 98	....do....	....do....		3 6
Company E			....do....	Apr. 8, 02	Apr. 21, 02		4 2
Company F			....do....	....do....	....do....		4 2
Company G			....do....	....do....	....do....		4 2
Company H			....do....	....do....	....do....		4 2
Company I			....do....	Dec. 3, 00	Apr. 5, 01		3 10
Company K			....do....	Dec. 5, 00	May 25, 01		3 9
Company L			July 22, 98	....do....	....do....		3 9
Company M			....do....	....do....	Apr. 5, 01		3 10
Twelfth Infantry.							
Headquarters	June 14, 98	Aug. 23, 98			Feb. 19, 99	Apr. 26, 02	3 5
Company A	....do....	....do....			....do....	....do....	3 5
Company B	....do....	....do....			....do....	....do....	3 5
Company C	....do....	....do....			....do....	....do....	3 5
Company D	....do....	....do....			....do....	....do....	3 5

[a] In China since July 6, 1900.

Organization.	Cuba.		Porto Rico.		Philippines.		Total insular service.	
	Departure.	Return.	Departure.	Return.	Departure.	Return.		
Twelfth Infantry—Continued.							*Yrs.*	*M.*
Company E	June 14, 98	Aug. 23, 98			Feb. 19, 99	Apr. 26, 02	3	5
Company F	do	do			do	do	3	5
Company G	do	do			do	do	3	5
Company H	do	do			do	do	3	5
Company I					do	do	3	2
Company K					do	do	3	2
Company L					do	do	3	2
Company M					do	do	3	2
Thirteenth Infantry.								
Headquarters	June 14, 98	Aug. 14, 98			Apr. 28, 99	July 19, 02	3	5
Company A	do	do			do	do	3	5
Company B	do	do			do	do	3	5
Company C	do	do			do	do	3	5
Company D	do	do			do	do	3	5
Company E	do	do			do	do	3	5
Company F	do	do			do	do	3	5
Company G	do	do			do	do	3	5
Company H	do	do			do	do	3	5
Company I					do	do	3	3
Company K					do	do	3	3
Company L					do	do	3	3
Company M					do	do	3	3
Fourteenth Infantry.								
Headquarters					May 25, 98	Aug. 18, 01	3	3
Company A					do	Apr. 26, 00	1	11
Company B					June 24, 99	do		10
Company C					May 25, 98	do	1	11
Company D					do	do	1	11
Company E					do	Aug. 18, 01	3	3
Company F					do	do	3	3
Company G					Aug. 4, 98	do	3	0
Company H					June 24, 99	do	2	2
Company I					Aug. 4, 98	do	3	0
Company K					do	do	3	0
Company L					do	do	3	0
Company M					do	do	3	0
Fifteenth Infantry.								
Headquarters	Nov. 28, 98	Jan. 9, 00			July 17, 00	Sept. 11, 02	3	3
Company A	do	do			do	do	3	3
Company B	do	do			do	do	3	3
Company C	do	do			do	do	3	3
Company D	do	do			do	do	3	3
Company E	do	Oct. 20, 99			Feb. 16, 02	Sept. 6, 02	1	5
Company F	do	do			do	do	1	5
Company G	do	do			do	Sept. 11, 02	1	6
Company H	do	do			do	do	1	6
Company I	do	Jan. 9, 00			Aug. 1, 00	do	3	3
Company K	do	do			do	do	3	3
Company L	do	do			do	do	3	3
Company M	do	do			do	do	3	3
Sixteenth Infantry.								
Headquarters	June 14, 98	Aug. 18, 98			May 30, 99	July 8, 02	3	3
Company A	do	do			do	do	3	3
Company B	do	do			do	Aug. 12, 02	3	5
Company C	do	do			do	July 8, 02	3	3
Company D	do	do			do	do	3	3
Company E	do	do			do	do	3	3
Company F	do	do			do	do	3	3
Company G	do	do			do	Aug. 12, 02	3	5
Company H	do	do			do	do	3	5
Company I					do	July 8, 02	3	1
Company K					do	do	3	1
Company L					do	do	3	1
Company M					do	Aug. 12, 02	3	2
Seventeenth Infantry.								
Headquarters	June 14, 98	Aug. 21, 98			Feb. 19, 99	Mar. 31, 02	3	4
Company A	do	do			do	July 22, 02	3	7
Company B	do	do			Jan. 19, 99	Apr. 2, 02	3	5
Company C	do	do			Feb. 19, 99	July 22, 02	3	7
Company D	do	do			Feb. 3, 99	do	3	8

Organization.	Cuba.		Porto Rico.		Philippines.		Total insular service.	
	Departure.	Return.	Departure.	Return.	Departure.	Return.		
Seventeenth Infantry—Continued.							*Yrs.*	*M.*
Company E	June 14, 98	Aug. 21, 98			Feb. 19, 99	Mar. 31, 02	3	4
Company F	do	do			do	do	3	4
Company G	do	do			Jan. 19, 99	do	3	5
Company H	do	do			Feb. 3, 99	do	3	4
Company I					Jan. 19, 99	Apr. 2, 02	3	2
Company K					Feb. 3, 99	do	3	2
Company L					do	July 17, 02	3	5
Company M					Jan. 19, 99	Apr. 2, 02	3	2
Eighteenth Infantry.[a]								
Headquarters					June 27, 98	Oct. 12, 01	3	4
Company A					June 15, 98	July 13, 00	2	1
Company B					do	do	2	1
Company C					June 27, 98	do	2	1
Company D					do	do	2	1
Company E					June 15, 98	Oct. 12, 01	3	4
Company F					June 27, 98	do	3	4
Company G					June 15, 98	do	3	4
Company H					June 27, 98	do	3	4
Company I					Nov. 7, 98	do	2	11
Company K					do	do	2	11
Company L					do	do	2	11
Company M					do	do	2	11
Nineteenth Infantry.								
Headquarters			July 23, 98	June 5, 99	July 24, 99	June 21, 02	3	9
Company A			do	do	July 26, 99	do	3	9
Company B			do	do	July 24, 99	do	3	9
Company C			do	do	July 26, 99	do	3	9
Company D			do	do	July 24, 99	do	3	9
Company E			do	do	July 26, 99	do	3	9
Company F			do	do	July 24, 99	do	3	9
Company G			do	do	do	do	3	9
Company H			do	do	do	do	3	9
Company I			do	do	do	do	3	9
Company K			do	do	do	do	3	9
Company L			do	do	July 26, 99	do	3	9
Company M			do	do	July 24, 99	do	3	9
Twentieth Infantry.								
Headquarters	June 14, 98	Aug. 23, 98			Jan. 26, 99	Mar. 13, 02	3	4
Company A	do	do			do	do	3	4
Company B	do	do			do	do	3	4
Company C	do	do			do	do	3	4
Company D	do	do			do	do	3	4
Company E	do	do			do	Mar. 27, 02	3	4
Company F	do	do			do	do	3	4
Company G	do	do			do	do	3	4
Company H	do	do			do	do	3	4
Company I					do	Mar. 13, 02	3	2
Company K					do	do	3	2
Company L					do	do	3	2
Company M					do	do	3	2
Twenty-first Infantry.								
Headquarters	June 14, 98	Aug. 23, 98			Apr. 18, 99	June 1, 02	3	4
Company A	do	do			do	do	3	4
Company B	do	do			do	do	3	4
Company C	do	do			do	do	3	4
Company D	do	do			do	do	3	4
Company E	do	do			do	do	3	4
Company F	do	do			do	do	3	4
Company G	do	do			do	do	3	4
Company H	do	do			do	do	3	4
Company I					do	do	3	1
Company K					do	do	3	1
Company L					do	do	3	1
Company M					do	do	3	1
Twenty-second Infantry.								
Headquarters	June 14, 98	Aug. 20, 98			Feb. 1, 99	Feb. 25, 02	3	3
Company A	do	do			do	do	3	3

[a] The Third Battalion, Eighteenth Infantry, sailed for Honolulu August 21 and served there to November 7, 1898.

Organization.	Cuba.		Porto Rico.		Philippines.		Total insular service.	
	Departure.	Return.	Departure.	Return.	Departure.	Return.		
Twenty-second Infantry—Cont'd.							*Yrs.*	*M.*
Company B	June 14, 98	Aug. 23, 98			Apr. 18, 99	June 1, 02	3	3
Company C	do	do			do	do	3	3
Company D	do	do			do	do	3	3
Company E	do	do			do	do	3	3
Company F	do	do			do	do	3	3
Company G	do	do			do	do	3	3
Company H	do	do			do	do	3	3
Company I					do	do	3	1
Company K					do	do	3	1
Company L					do	do	3	1
Company M					do	do	3	1
Twenty-third Infantry.								
Headquarters					June 27, 98	Dec. 1, 01	3	5
Company A					Oct. 17, 98	do	3	1
Company B					June 27, 98	do	3	5
Company C					do	do	3	5
Company D					June 15, 98	do	3	6
Company E					do	do	3	6
Company F					do	do	3	6
Company G					June 27, 98	do	3	5
Company H					June 15, 98	do	3	6
Company I					Oct. 17, 98	July 27, 00	1	9
Company K					do	do	1	9
Company L					June 27, 98	do	2	1
Company M					Oct. 17, 98	do	1	9
Twenty-fourth Infantry.								
Headquarters	June 14, 98	Sept. 3, 98			July 14, 99	Aug. 1, 02	3	3
Company A	do	do			do	do	3	3
Company B	do	do			Oct. 1, 00	do	2	1
Company C	do	do			June 22, 99	July 22, 99	3	4
Company D	do	do			Oct. 1, 00	do	2	0
Company E	do	do			June 22, 99	Aug. 1, 02	3	4
Company F	do	do			July 14, 99	do	3	3
Company G	do	do			June 22, 99	do	3	4
Company H	do	do			July 14, 99	do	3	3
Company I					June 22, 99	do	3	1
Company K					July 14, 99	July 22, 02	3	0
Company L								
Company M					Oct. 1, 00	July 22, 02	1	10
Twenty-fifth Infantry.								
Headquarters	June 14, 98	Aug. 22, 98			July 1, 99	Aug. 13, 02	3	4
Company A	do	do			Oct. 1, 00	Aug. 1, 02	2	0
Company B	do	do			July 1, 99	do	3	3
Company C	do	do			Oct. 1, 00	do	2	0
Company D	do	do			do	do	2	0
Company E	do	do			June 28, 99	Aug. 13, 02	3	4
Company F	do	do			July 1, 99	do	3	4
Company G	do	do			Oct. 1, 00	Sept. 6, 02	2	1
Company H	do	do			June 28, 99	Aug. 13, 02	3	4
Company I					July 1, 99	do	3	1
Company K					do	do	3	1
Company L					do	do	3	1
Company M					do	do	3	1
Twenty-sixth Infantry.								
Headquarters[a]					July 10, 01		1	3
Company A					Feb. 16, 01		1	8
Company B					do		1	8
Company C					do		1	8
Company D					do		1	8
Company E					July 1, 01		1	3
Company F					do		1	3
Company G					do		1	3
Company H					do		1	3
Company I					Feb. 16, 01		1	8
Company K					do		1	8
Company L					do		1	8
Company M					do		1	8

[a] The Second Battalion, Twenty-sixth Infantry, and Third Battalion, Thirtieth Infantry, were organized in the Philippines.

Organization.	Cuba.		Porto Rico.		Phillippines.		Total insular service.
	Departure.	Return.	Departure.	Return.	Departure.	Return.	
Twenty-seventh Infantry.							*Yrs. M.*
Headquarters					Jan. 1, 02		9
Company A					do		9
Company B					do		9
Company C					do		9
Company D					do		9
Company E					Jan. 21, 02		8
Company F					do		8
Company G					do		8
Company H					do		8
Company I					Dec. 5, 01		10
Company K					do		10
Company L					do		10
Company M					do		10
Twenty-eighth Infantry.							
Headquarters					Nov. 15, 01		11
Company A					do		11
Company B					do		11
Company C					do		11
Company D					do		11
Company E					Nov. 16, 01		11
Company F					do		11
Company G					do		11
Company H					do		11
Company I					Nov. 15, 01		11
Company K					do		11
Company L					do		11
Company M					do		11
Twenty-ninth Infantry.							
Headquarters					Apr. 1, 02		6
Company A					do		6
Company B					do		6
Company C					do		6
Company D					do		6
Company E					do		6
Company F					do		6
Company G					do		6
Company H					do		6
Company I					do		6
Company K					do		6
Company L					do		6
Company M					do		6
Thirtieth Infantry.							
Headquarters[a]					June 3, 01		1 4
Company A					Apr. 16, 01		1 6
Company B					do		1 6
Company C					do		1 6
Company D					do		1 6
Company E					Mar. 15, 01		1 7
Company F					do		1 7
Company G					do		1 7
Company H					do		1 7
Company I					July 28, 01		1 1
Company K					Aug. 19, 01		1 1
Company L					do		1 1
Company M					July 28, 01		1 2

[a] The Second Battalion Twenty-sixth Infantry, and Third Battalion, Thirtieth Infantry, were organized in the Philippines.

NOTE.—The services of the Sixth Cavalry, Tenth Field Battery, Twenty-fifth, Twenty-seventh, Thirty-first, and Thirty-sixth Companies Coast Artillery, and the Ninth, Fourteenth, and Fifteenth Infantry in China are included in the service in the Philippines.

The following troops are now serving in the Philippines: Second Battalion, United States Engineers; First, Fifth, Sixth, Eleventh, and Fifteenth Cavalry; Fourteenth, Fifteenth, and Twenty-fifth Batteries Field Artillery; Twenty-fifth, Twenty-seventh, Thirty-first, and Thirty-sixth Companies Coast Artillery; First, Second, Fifth, Tenth, Eleventh, Twenty-sixth, Twenty-seventh, Twenty-eighth, Twenty-ninth, and Thirtieth United States Infantry.

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THE MILITIA.

In regard to the militia of the several States and Territories, letters of instructions were sent to the officers detailed to attend the encampments, and their reports, when received, are examined and prepared for publication, should that be considered desirable. Such publication is not recommended this year, however, as but a small percentage of States have been heard from. The reports thus far received from officers of the Army detailed to attend State encampments indicate general interest, zeal, and good work on the part of the National Guard, and state that marked improvement was shown during the encampments.

INSTRUCTION IN THE ARMY.

The appointment in the Army since 1898 of more than 1,000 officers—from the ranks, ex-volunteers, and civilians—made it an absolute necessity, as pointed out in the last report, that a comprehensive scheme of military instruction should be instituted, looking to the ultimate result of imparting to all officers of the Army a thorough technical knowledge of all their duties relating to drill regulations, guard duty, target practice, service with troops in camp, military law, field engineering, and generally in all branches of knowledge deemed indispensable to military men.

Briefly outlined, the plan adopted, full details of which will be found in appendix, pages 94–97 and 113–122, is as follows:

1. Post Officers' Schools.

At each military post, under the immediate charge and supervision of the post commander, an officers' school for elementary instruction in theory and practice.

All officers of the line to attend, except under such circumstances as would exempt them from any other duty.

All captains of the line of less than ten years' service, except those graduated from the infantry and cavalry or artillery schools, will be required to qualify in the prescribed course of instruction. Field officers and captains of over ten years' service will be utilized as instructors whenever possible.

These schools to be open for instruction to officers of the several National Guards, to officers of volunteers, and to graduates of military schools and colleges which have had any officers as instructors.

2. Special-Service Schools.

The Artillery School, at Fort Monroe, Va.

The Engineer School of Application, Washington Barracks, D. C.

In this school four branches of instruction are established: 1 and 2, military and civil engineering; 3, electrics, and 4, ordnance and armor.

The School of Submarine Defense, Fort Totten, N. Y.

There will be courses of instruction for officers and enlisted men, including electrician sergeants, and, for the present, twenty candidates for that position. The commandant and instructors constituted a "torpedo board" for the consideration of all subjects pertaining to submarine mining and coast defense generally upon which its opinions and recommendations may be desired by the Commanding General of the Army.

The School of Application for Cavalry and Field Artillery, at Fort Riley, Kans.

The Army Medical School, at Washington, D. C.

No detail to any of the above schools to continue more than four years, and no officer to be permitted to pass from one school to another without an intervening tour of service with troops proportionate to the period of previous school service.

The special-service schools to be open to such officers of the National Guard and former officers of volunteers who furnish evidence of such preliminary education as to enable them to benefit by the courses of instruction.

3. A General Service and Staff College at Fort Leavenworth, Kans.

This college, which absorbs the infantry and cavalry school at that place, is designed as a school of instruction for all arms of the service, to which are to be sent officers, preferably subalterns, who have been recommended for proficiency attained in the various post officers' schools. This college is also open for instruction to officers of the National Guard and others named under the head "Post officers' schools."

The college staff is required to report to the Secretary of War the qualifications of officers of the National Guard, ex-officers of volunteers, and graduates of military schools and colleges who shall have attended this college, specifying character of service, line or staff, for which they are specially qualified. A register of such qualified students will be kept at the War Department.

4. A War College for the Most Advanced Course of Professional Study, at Washington Barracks, D. C.

The War College Board will exercise general supervision and inspection of all the different schools above enumerated, and maintain through them a complete system of military education, in which each separate school shall perform its appropriate part.

The officers to be detailed to pursue the course at this college are divided into two classes:

First. Those who have been recommended as distinguished graduates of the general service and staff college, and,

Second. Such field officers and captains as may be specially designated by the War Department.

A register will be kept in the War Department in which shall be entered the names of officers of the Regular Army below the grade of colonel, as follows:

Officers who have heretofore exhibited superior capacity, application, and devotion to duty, the names to be selected by a board of officers to be convened for that purpose.

Officers who shall be reported as doing specially meritorious work in the above-mentioned schools other than the officers' schools at posts.

Officers who at any time specially distinguish themselves by exceptionally meritorious service.

It will be the aim of the Department to make this register the basis of selection for details as staff officers, military attachés, and for special service requiring a high degree of professional capacity.

While time and experience will be required in order to bring to perfection the details of this progressive scheme, it is confidently expected

that the hearty sympathy and cooperation of all officers of the Army will be enlisted, to the end that full success will be attained.

INSTRUCTION IN MILITARY SCHOOLS AND COLLEGES.

The legislation authorizing the detail of officers of the Army for duty at schools and colleges having, respectively, capacity to educate not less than 150 male students above the age of 15, has not, in the past, resulted in the full measure of expected benefit. This has been due to various causes; among others, lack of hearty and full cooperation on the part of the faculties of several colleges with the officer detailed thereat as military instructor, in some cases his value being appreciated purely from a disciplinarian point of view, or as a professor of mathematics, etc.

The aptitude of American youths for military exercises has, however, generally proven very good. At the outbreak of the Spanish-American war many of the young men appointed in the Army were selected from these schools, and a much larger number sought service in the volunteers, where their knowledge of drills, etc., was of much value.

With a view to the full development of the capabilities of the scheme of military instruction in our large schools and colleges, the following plan has been adopted by the War Department:

All educational institutions within the meaning of section 1225 of the Revised Statutes, and of the mandatory acts, have been divided into three classes, as follows:

First class. All schools to which officers of the Army, active or retired, may be detailed under the provisions of existing law, except schools of the second and third classes.

Second class. Agricultural schools established under the provisions of the act of Congress of July 2, 1862, and which are required by said act to include military tactics in their curriculum.

Third class. Military schools or colleges—i. e., those whose organization is essentially military and one of whose primary objects is the acquisition of a high degree of military drill and discipline.

No detail of military instructor shall be made at any institution which does not guarantee to maintain at least one hundred pupils under military instruction.

The rules governing details of officers, and the programme of instruction prescribed as the minimum course of military instruction, practical and theoretical, at each of the three classes indicated above, will be found in appendix, pages 123–132.

POST EXCHANGES.

During the year ending June 30, 1902, the average receipts of exchanges in operation in the Army, so far as reports have been received, amounted to $1,124,542.50 as against $2,123,077.29 during the preceding fiscal year, and there was received as money on deposit $23,703.51, making the total amount of money received as $1,148,246.01. There was expended for merchandise purchased, rents, fixtures and repairs, and expenses of operation, $888,897.98, which, less deposits, leaves a profit of $235,644.52. From this amount there was donated to the funds of the several regimental bands $2,940.84; to the maintenance of post gardens, $1,201.92; to post libraries,

$589.65; to gymnasiums, $1,508.11; as prizes for the encouragement of athletic sports, $4,218.94; and after setting aside the sum of $86,252.67 as a reserve fund to meet anticipated expenses for at least one month, there was passed to the credit of the companies and mess funds for the benefit of the soldiers, in the form of dividends, the sum of $138,832.39. The net value of these exchanges, that is to say, the balance of their combined assets over their liabilities, was, on June 30, 1902, $249,303.92 as against $353,748.40 on June 30, 1901.

THE RECRUITING SERVICE.

In October, 1901, the enlisted strength of the Army, exclusive of the Hospital Corps and the Porto Rico Provisional Regiment, was 76,084, or only about 1,200 below its authorized strength at that time, as fixed by the President under the act of Congress approved February 2, 1901, and published in General Orders, No. 66, of 1901, from Headquarters of the Army. As shown, however, in my last annual report, the returns indicated that there would be a loss to the regiments in the Philippines, by expiration of terms of enlistment, between October, 1901, and June, 1902, of upward of 20,000 men, while large losses from the same cause were to be anticipated in the Artillery Corps, mostly in the United States. Active recruiting was accordingly continued to meet these losses.

The commanding general, Division of the Philippines, having reported, October 15, 1901, that commands in his division would be decreased about 50 per cent by the end of the following March, and that men going out ought to be replaced, instructions were given for the establishment of a recruit camp at the Presidio of San Francisco, Cal., for the necessary instruction and equipment of recruits, following former plans, and utilizing for the purpose officers returning to the Philippines so far as possible. The recruiting officers at city stations and military posts were also instructed to enlist for infantry and cavalry desirable white applicants fitted for tropical service, and send them to the Presidio and other specified rendezvous, with a view to their equipment and thorough instruction preparatory to shipment to the Philippines. It was further directed that no recruits be sent to the Division of the Philippines until they had been held under observation long enough to develop any infectious diseases to which they might have been exposed prior to enlistment. The shipment to that division of white infantry and cavalry recruits was begun in November, 1901, and continued so long as the necessity existed. Recruits required for the coast and field artillery and the colored regiments in the Philippines were also forwarded as opportunity offered.

The forwarding to that division of recruits of different arms was discontinued as follows:

White cavalry in February, 1902.

White infantry and coast artillery in April, 1902.

Field artillery in June, 1902.

Colored recruits in August, 1902, with the recall of the last colored regiment from the division of the Philippines.

In view of the reduction of the force in the Philippines and the recall of regiments for home duty, instructions were given April 3, 1902, and subsequently to the commanding general, division of the Philippines, to transfer from returning regiments to regiments having the longest time to remain in the Philippines privates in their first

enlistment having two years or more to serve. The effect of this action was to retain there recruits who had arrived at a comparatively recent date and been assigned to regiments subsequently recalled to the United States.

In July, 1902, the commanding general, division of the Philippines, was further authorized to supply vacancies in the cavalry and infantry, when necessary, by transfers from returning infantry regiments, or from remaining infantry regiments, that might be in excess, and it is probable it may not be necessary to forward recruits to the Philippines for some time yet, in view of the reduction in the authorized strength of organizations under the President's instructions of July 1, and Oct. 24, 1902, published in General Orders, Nos. 63 and 108, from Headquarters of the Army.

By the middle of February, 1902, it became apparent that the needs in the Philippines and in this country could be fully met by a less rapid accumulation of recruits, and instructions were accordingly given to recruiting officers at all city stations while continuing, unremittingly, their efforts to attract large numbers of applicants, through the wide distribution of printed matter, to make most careful selection therefrom of the very best material, wholly eliminating actual and suspected minors, and all others who might not be beyond all doubt morally, mentally, and physically qualified. This action has resulted in securing recruits in smaller numbers, but of a higher grade, including a much larger proportion of former soldiers. Thus, in January, 1902, the percentage of reenlistments to the whole number accepted was less than 20, while for the month of May it was over 50, and the average for the six months from March to August, 1902, inclusive, was 44.6 per cent.

March 3, 1902, in order to effect a still further reduction in the rate of enlistment, the instructions of February 15 were reiterated, and recruiting officers were directed to close at once auxiliary stations involving any considerable expense without commensurate results in the highest class of recruits. About sixty such stations were closed by the end of March.

General Orders, No. 63, July 1, 1902, from headquarters of the Army, already referred to, announced a reduction of the authorized strength of troops of cavalry to 75 men and of companies of infantry to 80 men; but as regards regiments serving within the United States, it has not been deemed necessary or practicable to maintain them at the full strength thus authorized, which might require assignments of recruits in large detachments, it being desired to so arrange that, in future, expirations of terms of service in any organization shall be equitably distributed, so far as practicable, and also to avoid filling any regiment with recruits who might become "short-term men" by the time the regiment should be again designated for service abroad. The question of barrack capacity has also necessarily been given consideration in this connection, care being taken to avoid, so far as practicable, demands for additional barrack accommodations in advance of the time in which the same can be provided with the means at the disposal of the Department. Department commanders in the United States were accordingly informed about July 1, that, with certain exceptions, infantry companies need not be maintained beyond a minimum effective strength of about 65 men per company, and it has been the aim to keep troops of cavalry in the United States at an effective strength of

only about 70 men each. In the case of regiments and battalions utilized at depots of recruit instruction for the double purpose of supplying a garrison and providing for the instruction of recruits, it has been deemed sufficient to provide only 20 or 25 privates to a company, giving as a maximum 43 men to a company of infantry and 49 to a troop of cavalry. At present a total of 3 regiments of infantry and 2 squadrons of cavalry are utilized for the purposes indicated at depots of recruit instruction.

THE RECRUITING DETAIL.

A new detail of recruiting officers for a tour of two years was made to date from November 1, 1901. Officers for this detail were nominated by the commanding officers of the infantry and cavalry regiments from officers who had seen long service with their regiments. The 45 officers thus supplied were supplemented later by the detail of 13 officers from the Artillery Corps, which in numbers is equivalent to 13 regiments. The additional officers needed from time to time have been secured by special details, selection generally being made of officers invalided home from the Tropics, or who for other reasons were not available for regimental duty. Taking the period from October 1, 1901, to October 1, 1902, the largest number of officers detailed for the general recruiting service was 78; the smallest number was 69, that being the number October 1, 1902.

RECRUITING STATIONS AND TERRITORY CANVASSED THEREFROM.

In October, 1901, there were 104 central recruiting stations in the larger cities; there are now 96 such stations, about half of which are permanent, the remainder being maintained as recruiting centers so long as necessary for an effective canvass of surrounding territory. In addition, many temporary stations are opened from time to time and visited by officers stationed at the recruiting centers when necessary to make enlistments. In this manner the same officer frequently conducts two or more central stations and also visits, under proper orders, many temporary stations within his recruiting territory. Recruiting officers have instructions, in making such canvass, to exercise all possible economy, carefully guarding expenditures for mileage, transportation, etc., and to see that results are accomplished commensurate with expenditures involved. The smallest number of cities and towns canvassed during any one month by these general recruiting officers was 194; the largest number was 248.

During the year the efforts of officers of the general recruiting detail have been supplemented by enlistments at all military posts by officers detailed by the post commanders, and measures have been taken to increase these post enlistments by a canvass, from posts, of contiguous territory, under orders of post and department commanders, in a manner closely analogous to the canvass made from central stations of the general recruiting service. In this case, however, little additional expense is involved, as the recruiting officer and surgeon are sent out from the post to make examinations and enlistments, and the recruits are sent into the post immediately upon their enlistment. The largest number of towns canvassed by recruiting officers from posts was 36; the largest number of cities and towns visited during any one month by recruiting officers, from both recruiting stations and posts, was 284;

but in addition to these many other towns were visited by enlisted members of recruiting parties, distributing recruiting posters, circulars of information, etc., and citing desirable applicants to some central station.

RECRUITS FOR TROPICAL SERVICE.

All organizations sailing for the Philippines have been filled with recruits prior to their departure from the United States, the number of recruits thus supplied between October, 1901, and August, 1902, to organizations about to sail, as indicated, being 1,083. During the year ending September 30, 1902, 5,844 recruits were forwarded to organizations already in the Philippines, and 309 recruits were forwarded to Cuba and Porto Rico for organizations serving therein.

PRECAUTIONS AGAINST THE SPREAD OF DISEASE.

In February, 1902, instructions were given to recruiting officers to adopt all practicable measures to the full extent of the facilities at their disposal to prevent sending recruits to rendezvous or posts either with the germs of disease or in an uncleanly condition rendering them subject to attacks by disease or liable to transmit the germs of disease to others, and providing that any clothing worn by recruits before enlistment and taken by them to rendezvous and posts must first be thoroughly disinfected. About the same time instructions were given for isolating recruits received at rendezvous whenever any suspicion arose of their having been exposed to possible contagion, and for the adoption of all practicable measures by the commanding officer and the medical officer for guarding against outbreaks of any contagious disease among recruits and for stamping out the same should it occur.

Arrangements have now been perfected through concert of action by this office, the Surgeon-General, and the Quartermaster-General, after careful consideration and experiment, for supplying to each recruiting station the best adapted disinfecting outfit, with full instructions for its proper use.

GENERAL RESULTS.

The total number of enlistments and reenlistments in the Army during the fiscal year ending June 30, 1902, exclusive of the Hospital Corps and the Philippine scouts, was 37,461, of which number 28,226 were made at city stations by officers of the general recruiting detail, and 9,235 in the vicinity of military posts and in the field, by officers detailed by their commanding officers.

The enlistments are classified as follows:

For the general service	36,252
For the Porto Rico Provisional Regiment of Infantry	497
For staff departments	712
Total	37,461

Of the 37,461 accepted applicants, 32,249 were native born, 4,726 of foreign birth, and 486 were born in Porto Rico; 34,677 were white, 2,284 colored, 14 Indians, and 486 Porto Ricans. The enlistments numbered 26,026 and the reenlistments 11,425. Excluding reenlist-

ments, the percentage of native born among original enlistments was 89.5.

The reports show that the recruiting officers making the 36,749 enlistments embraced in the first two items of foregoing list rejected 87,081 applicants, or 70 per cent of the whole number, as lacking in either mental, moral, or physical qualifications; 1,622 of these were rejected as aliens and 3,828 as illiterates.

The number of enlistments reported for the Philippine Scouts during the fiscal year was 4,079. Under the terms of the law authorizing their enlistment, these are all natives of the Philippine Islands, and with three or four exceptions they were original enlistments, although most of them had previously served as scouts under civil contract.

The number of enlistments and reenlistments for the Hospital Corps during the fiscal year was 1,235, of which number 963 were native born and 272 of foreign birth; 1,173 were white and 62 colored. The enlistments numbered 506, and reenlistments 729.

Including the Hospital Corps and the Philippine Scouts, the aggregate of all enlistments and reenlistments for the Army during the fiscal year ending June 30, 1902, was 42,775.

ADJUTANT-GENERAL'S DEPARTMENT.

The legal organization of the Department remains as at the date of last report.

Two officers have since been promoted to the rank of brigadier-general, viz, Col. William H. Carter, July 15, who has been designated as one of the members of the War College, and Col. Thomas Ward (July 22), who retired on the same day. Of the two vacancies created in the Adjutant-General's Department by the promotion of these officers one remains yet unfilled.

At this date the Department consists of the Adjutant-General, 5 assistants with the rank of colonel, 7 assistants with the rank of lieutenant-colonel, 2 of whom are detailed officers, one from the cavalry, the other from the artillery, and 14 assistants with the rank of major, all detailed officers—5 from the cavalry, 2 from the artillery, and 7 from the infantry.

CHAPLAINS.

The laws governing the appointments of chaplains in the Army were for many years limited to the simple requirements that a chaplain shall have been a regularly ordained minister of some religious denomination and shall have presented testimonials of his good standing as such, while his new duties were prescribed in general terms.

In view of the fact that the conditions surrounding the army chaplain differ largely from those to which he has been accustomed, it becomes apparent that the measure of his efficiency in the new field of action depends on three important factors, viz, sound health, suitable age, and preparation. While the first of these requirements is indispensable, the last two determine his capacity to become thoroughly imbued with the spirit of military organizations, their conditions and needs, and, further, the care with which he will learn the duties of his new position, which, in addition to religious ministrations, require

him to give instruction to the enlisted men in the common English branches of education.

The act of February 2, 1901, limits the highest eligible age to 40 years. From this limitation the act of March 2 of the same year exempts persons who served as chaplains of volunteers after April 21, 1898, who were under 42 years of age when originally appointed.

In order to more fully ascertain the qualifications of candidates, the War Department, November 4, 1891, prescribed the scope of examination as to extent of school, academic, collegiate, and theological education. (Appendix, pp. 88–89 not printed.)

It is confidently expected that candidates who successfully pass the prescribed physical and mental examination will form a body of zealous, intelligent chaplains, keenly alive to the demands and duties of their position, and prove a powerful factor in further developing and maintaining a high moral and religious tone in the American Army.

COMBINED ARMY AND NAVY MANEUVERS.

The change incident to the loading of the guns at the breech instead of at the muzzle has been revolutionary in its effects and has placed the art and science of artillery on the highest plane of development, necessitating in its application the most advanced and intricate appliances of machinery, steam, and electricity. In this connection it may be remarked that as late as the breaking out of the Spanish-American war our artillery officers, except in theory, were strangers to the modern high-power guns.

January 9, 1902, the Secretary of War, through the Secretary of the Navy, invited the cooperation of the Navy in combined maneuvers, to take place at some time during the year in the artillery districts of New London and of Narragansett, in order to test the efficiency of the matériel and the training of the personnel of the artillery garrisons stationed in the proposed theater of operations. It was at first contemplated to undertake operations embracing a force of all arms, to be landed at some point on the coast, but, the full scheme not being found practicable for various reasons, it was finally determined to confine the scope of the maneuvers to the fleet and to the artillery of the forts in the districts named, the maneuvers to begin on Saturday, August 30, and terminate on the following Saturday, September 6.

The forts in the artillery districts of New London comprise Forts Mansfield, Wright, Michie, and Terry, while those in the artillery district of Narragansett embrace Forts Rodman, Adams, Wetherill, and Greble; that is to say, 9 posts on the Atlantic coast of the United States, the entire defense of which is composed of 45 forts.

The garrisons of the above-named forts were to be mobilized on a war basis, and to secure this end, 24 companies were detached from other posts in the Department of the East and concentrated in the two artillery districts above named, making, in all, 34 companies of seacoast artillery taking part in the maneuvers. The regular artillery troops were reenforced by 3 companies of engineers from Washington Barracks, Signal Corps men, the First Massachusetts Heavy Artillery, 2 companies of the Connecticut Heavy Artillery, and the New York and Connecticut Signal Corps.

Maj. Gen. John R. Brooke, commanding the Department of the East, having been placed on the retired list, September 21, 1902,

Maj. Gen. Arthur MacArthur, commanding the Department of the Lakes, was designated to take temporary command of the first-named department and was placed in immediate charge of the land defenses in the combined army and navy maneuvers.

A careful examination of the many highly interesting and valuable reports made by officers who participated in the combined maneuvers resulted in the presentation of the following suggestions as deserving serious consideration:

Generating plants at posts.—The maneuvers have demonstrated the necessity of reserve power not only for present installation, but also to meet requirements of new ones. Both efficiency and economy demand the construction at each post of large, central generating plants provided with suitable storage batteries well protected from hostile fire.

Searchlights.—Much remains to be learned by the Army in their use; searchlights drill and control are second in importance only to fire control; all lights, both searching and illuminating, should be under the direct control of the fire commander, and to avoid interference, certain limited sectors of water area assigned to each searchlight; experiments should be conducted in a fully equipped artillery to determine the best methods of locating, controlling, and operating searchlights; at the present time the Artillery Corps does not contain the skilled men necessary to run the large number of searchlights required for the efficient use of the guns at night.

Observing instruments.—It is deemed important that all future contracts for the supply of all observing instruments be made to include delivery at place of destination, and setting up and adjustment at their permanent positions, and that they should invariably be finally inspected and accepted only after such setting up and adjustment.

Telautograph.—A general test of this instrument seems desirable in order to test its positive value.

Telephones.—The number of telephones in use at a commander's station involves a great deal of confusion and there is great need of simplification in this respect.

Plotting boards.—The effort to have one invariable type is thought a mistake; type sizes of plotting boards are highly desirable.

Night drills.—The number of these drills should be increased and fire commanders always required to be present thereat. This is deemed of first importance, as the majority of attacks on forts would probably be made at night.

Practice ammunition.—For the purpose of experimental investigation necessary to the evolution of an entirely satisfactory fire-control system, the supply of full service charges of ammunition for practice firing at movable targets should be quadrupled for, say, the next five years.

Signal observers.—These men should be imparted sufficient nautical knowledge to enable them, when on duty at outposts, to identify with certainty every war ship seen by them.

Artillery experts.—The present number of electrician sergeants, limited to a maximum of 100, is insufficient, and their established rate of pay will not secure, or at least retain, men qualified to maintain and operate the scientific instruments and complex electrical appliances pertaining to fire control. These demand for their care and use the services of a class of men that can not be found in the ranks. The

employment of civilians fails to meet the requirements, as the men employed must be subject to military authority and discipline. The very nature of their duties makes them a part—a most important one—of the combatant element, and they must therefore be included in the permanent military establishment. For this purpose a corps of artillery experts is necessary to embrace steam engineers, machinists, and electricians. Such a corps could readily be organized by expanding the detachment of post electrician sergeants to not less than 400, changing the name, and classifying the men in three grades, the highest of which to receive not less than $75 per month and the intermediate grade $50. As this corps is intended absolutely for coast artillery, it should be made an integral part of the artillery arm, the men composing it to be assigned as directed by the Secretary of War.

Artillery districts.—The staff of a district commander should embrace an acting ordnance officer, assisted at the various posts in the district by an ordnance sergeant, to be made responsible for the proper supply and care of all the surplus ordnance stores in the district, which should be made the unit instead of the fort, as at present. This latter point has been partly recognized by the Ordnance Department in its establishment of an ordnance machine shop for the use of each group of neighboring forts.

A signal officer should likewise be assigned to each artillery district to supervise the care, maintenance, and repair of all electrical instruments and appliances, such details to be made from the artillery, and, to offer some incentive to the officer detailed, carry the rank and pay of the higher grade. After four years' service on such detail the officer to return to the artillery corps, when he would be fully familiar with the electrical methods of communication, fire control, etc.

General remarks.—The maneuvers have proved that the rank and file of our Army can be depended upon in every emergency; that apparently impossible tasks can be accomplished under the spur of necessity, and that there is an immeasurable gulf between practice and theory. The lessons learned by both officers and men were of more practical value than years of ordinary garrison routine and instruction. The target practice held in connection with the maneuvers was productive of excellent results, although conducted under trying conditions, due to rush and unreadiness. It was the first seacoast practice ever undertaken in the United States on anything like a service basis, and such practice should be made a prominent and indispensable part of all future maneuvers. A limited number of Ordnance, Engineer, and Signal Corps officers should be detailed at important artillery forts during the period of target practice to observe action of the material, under service conditions, provided by their respective departments.

At the forts mentioned troops had been concentrated in sufficient numbers to man the guns during the maneuvers. The garrison consisted of companies brought from different parts of the seacoast, some having had previous acquaintance with the armament, others very little, if any. The association and discussion incident to such concentration must be regarded as an important educating factor.

In no other way than by such maneuvers in time of peace can so good an opportunity be afforded for observing the defenses of each locality, for concerted training of the personnel, for testing material and methods, and for intelligent criticism in general. It is therefore strongly recommended that similar exercises be conducted annually

and made to embrace each year a new theater of operations, so that the benefit may be shared by the different garrisons in the several fields of defense.

In future rules it is suggested that the number of points required to reduce defenses should conform more nearly to actual experience in attacks on fortified places.

It is thought that a more successful and intelligent use of ordnance material by the troops would be obtained by publishing to the artillery the results of new experiments as soon as made, and the description of new devices. The need of a complete list of ordnance supplies, kept up to date, is manifest.

Some system should be devised by which the artillery defense of forts would not be rendered helpless by a heavy fog.

The wireless work, as conducted by the Signal Corps, established the fact that wireless telegraphy is an important factor in the defensive operations of an artillery district, increasing by many miles the extreme distance at which the enemy's approach can be detected and his ships located, thereby affording to the artillery commander ample time in which to perfect his own offensive operations.

The conviction expressed by the commanding general in charge of the land defenses "that every officer and enlisted man of the Army and of the National Guard who took part in the maneuvers entertains a feeling of admiration for the splendid manner in which the naval part of the programme has been conducted, whereby the confidence in and affection for the sister service, ever constant, have been renewed and emphasized by this exceedingly agreeable association in prosecuting professional work of great importance to the nation," voices a sentiment heartily concurred in by the entire Army.

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RESTORATION OF THE CANTEEN.

The restoration of the exchange as it existed prior to the passage of the act of February 2, 1901, prohibiting the sale of beer, is desired and urged by the great majority of officers and men and by none more than those of pronounced temperance views. Numerous reports confirm the views long held by this office that the old exchange contributed to sobriety, health, and contentment of the men. The increase of desertions and of trials for infractions of discipline is, by those best informed, attributed to the abolition of the former privileges of the exchange.

VOCAL MUSIC.

The instruction of our men in vocal music would be a step in the direction of contentment and better discipline. Every regiment should have its marching song. Frequent practice in singing, particularly during the long winter evenings, would do much to make our men satisfied to remain in quarters and away from the baleful influence of the barrooms that exist in too great numbers in the vicinity of all our military posts. These barrooms are under the protection of the license and laws of the several States and are beyond the control of the military authority.

GENERAL STAFF.

The detail-staff system works to the entire satisfaction of the Department. The more a scheme for a general staff is studied the more

convinced I become that it offers the best solution of the vexatious friction with which you and your predecessors have had to contend for many years. It is recommended that it again be brought to the attention of Congress and early action urged in the best interests of the service.

Respectfully submitted.

H. C. CORBIN,
Major-General, Adjutant-General U. S. Army.

The SECRETARY OF WAR.

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REPORT OF THE INSPECTOR-GENERAL.

WAR DEPARTMENT,
INSPECTOR-GENERAL'S OFFICE,
Washington, D. C., September 29, 1902.

SIR: I have the honor to submit the following report of the operations of the Inspector-General's Department for the fiscal year 1902, embracing some items having direct and immediate touch with the life and comfort of the troops. These are generally matters of detail, of which some notice is essential from year to year to secure the desired excellence in the current important matters concerning the military establishment which receive the attention of higher authority.

It is essential to the maintenance of an army in anything like a satisfactory state of efficiency that not only should the entire machinery of the service, but also its inspection, from minutiæ at initial point to final action and file of report in the central office, be kept in the best possible working order, so that the irregularities, deficiencies, and judicious criticisms shall receive prompt and effective remedial action, and wherever excellence prevails and the matters and persons are specially deserving commendation they shall be clearly and promptly presented. The present system secures prompt action and the best results in connection both with the condition of posts and commands, and also of property and disbursements. The test of war has doubly proved this; for the excellence of the Army is universally admitted; and no charge of malfeasance or corruption has held against any Regular officer. If superior worth and the highest honesty and efficiency is attained under our present military system, what more is desired? Our experience since 1898 demonstrated that our methods attained the very best. It may not be difficult to find something worse. This has the approval of our worthiest soldiers and statesmen throughout our history.

Under your instructions of August 10, 1901, I was absent on an inspection tour at Honolulu, H. I., Pekin, China, and the Philippines from August 10, 1901, to March 6, 1902, and some of the results pertaining thereto are included under the various subjects in this report.

There have been no changes in the permanent personnel of this department during the year, but three officers detailed in it under the provisions of the act of February 2, 1901, were relieved and three others were detailed in their stead. As the law of February 2, 1901, hardly gave enough inspectors for the essential inspections, local

authorities have felt compelled to assign more to the duty; as seems to be the case in other staff duties also, as necessity knows no law, and the necessity for ubiquitous and organized inspection presses upon every officer responsible for success in face of the enemy only less than to provide for such absolutely necessary duties as quartermasters to unload and care for and forward stores, for instance. It is a historical and recognized feature of our military practice that much of the most trying work in several departments was done at the farthest front by temporary officers. It is only fair that their names shall be known and their merits recognized, and also this ambidextrous adaptability of the American Army which proves that its methods have habitually prepared it to meet every emergency successfully. The promotions by selection in times of peace have, perhaps, been the weakest point in our system practically.

Since the close of the fiscal year, Colonel J. P. Sanger, inspector-general, has been promoted to brigadier-general of the line, dating from July 23, 1902. Lieutenant-Colonel Charles H. Heyl was, in consequence, promoted to colonel. This naturally causes some transfer of duties; and Colonel Vroom and Lieutenant-Colonel Chamberlain have been ordered to the Philippines to take over the duties there recently vacated, and other officers have been recommended in their proper turn.

Development in our latest field.

Coming down to service in the Philippines, where the prompt forwarding of reports has been greatly hampered by lack of rapid transit and modern mail facilities, we find a letter dated April 26, 1901, was addressed to the inspector-general, Division of the Philippines, on the subject. Possibly it had already attracted attention independently. But however originated, with the hearty cooperation of commanders and inspectors upon lines indicated therein, united effort has been apparently productive of excellent results, and now the inspector there not only furnishes the post commander with a written statement of irregularities and deficiencies upon completion of his inspection, but, before leaving the post or station, receives the commander's report of remedial action taken thereon and forwards it as an inclosure to the inspection report. So expedition and efficiency are secured amidst unusually adverse surroundings.

As indicative of the prompt and beneficial results achieved, Colonel Sanger, inspector-general Division of the Philippines, in his annual report, dated June 30, 1902, says:

> As far as practicable the necessary remedial action by company, post, brigade, and department commanders and their dependent staff officers appears to have been taken on all inspection reports now passing through these headquarters.

What could be more prompt and effective, as the chief of staff is an officer of the Inspection Corps, and the division commander (General Chaffee) was formerly on duty in it as inspector-general of the Departments of Arizona and Colorado, and nothing can daunt the workers nor delay this work, which lies so near the morale and center of every military organization? Can not this condition be faithfully maintained universally, and the inspector continue always to recognize the results of his work?

The operations of the present system may be more readily understood from a glance at the following table, compiled from the records of this office for 100 of the posts inspected during the year:

Number of inspection reports considered.	Number of irregularities and deficiencies.							Number of subjects extracted in this office to Secretary of War, Lieutenant-General, chiefs of bureaus, etc.
	Furnished by inspectors to post commanders.	Additional noted or furnished by higher authority.	Additional noted in this office.	Total.	Remedied or explained.	Awaiting result of action taken.	No action taken up to receipt of report at this office.	
100	1,184	46	102	1,332	932	207	193	539

This is more than 1,000 items which accomplished officers considered, when in immediate contact with the troops, would benefit the service if given prompt consideration; and about half of these reached the highest authority having ultimate control of these matters, and final and complete action was taken already on five-sixths of them. About a dozen items concerning each command, or over a hundred annually for each inspector (or several thousand in all) are thought worthy of such notation that about half reach the several authorities in the War Department, in order that affairs affecting the soldiers shall be kept as perfect as practicable. In mere labor this inspection of troops may be but a moiety of the work performed: the other branches, such as money, property, investigations, etc., may be given a moment's consideration later on. As a supplement to the powers given commanders, no better system has ever been applied in a free country. Through this the honorable Secretary of War, the bureaus of the War Department, and the commanding generals gain an independent view of the condition of the Army in all its ramifications; and this has proven its utility in innumerable ways as a potent agency toward the promotion of economy and efficiency and the contentment of the soldier—as the orders issued, the instructions given, the boards appointed, and other action taken, or the consensus of opinion of experienced officers which is collected and presented will attest, from the Sunday rest order in 1889, to the abolition of the blanket bag in 1902.

As there were some 582 posts inspected, the indication is easily deduced for the whole Army, but anything more explicit may not now be needed.

The experience of mankind in commercial, professional, and scientific communities has for years been tending directly to the organization of all forms of business into specialties, until we have reached that stage where only through such agencies can successful general results be looked for. The business of this department, in its several branches, is conducted as a specialty, and every defective link is discovered before the chain is put to the final test; no irregularity can go very long undetected, and all the interests of the service are safeguarded, and all public plunder restrained or kept at bay, and every excellence is clearly announced and the merit of each and all recorded and reported faithfully.

During the year the inspection service has been well and efficiently conducted, and the inspectors have discharged their duties with great fidelity and often in the face of many difficulties. In this connection Colonel Sanger remarks:

> The inspection of interior posts has involved long journeys, many discomforts, and considerable personal risk. The trails are so difficult and the streams such

serious obstacles that the execution of Division General Orders, No. 58, of 1900 (requiring quarterly inspections) has not been possible in all cases. Nevertheless, by frequent journeys, at odd times, and by taking advantage of all opportunities, the duty of inspection has been well performed.

In the Journal of the Continental Congress of December 11, 1777, will be found a resolution expressing the opinion of Congress that it is essential to the promotion of discipline in the American Army, and to the reformation of the various abuses which prevail in the different departments, that an appointment be made of inspectors-general, to "be conferred on experienced and vigilant general officers, who are acquainted with whatever relates to the general economy, maneuvers, and discipline of a well-regulated army." Under this resolution an inspector-general, with the rank of major-general, was appointed, and a corps of sub-inspectors and brigade inspectors, having regimental rank, was announced in orders. The inspection branch was thus inaugurated and became an important factor of the Army; and so essential to its welfare was it considered by George Washington when general commanding that it received, after more than five years of experience, his entire approbation and the expression of his sense of public obligation for the meritorious services rendered during the crucial test of war. The expressed intention of the resolution has, it is believed, been fully met in appointments to, and details in the corps; and experienced officers who were known to be able, zealous, conscientious, discreet, and possessing high professional attainments, have habitually been selected. Fully equipped for the exercise of subordinate command upon joining the corps, the experience gained in it by the observation of persons in command or official responsibility and the different methods adopted to enforce law, regulations, and orders, the administration of various posts and the best way to effect uniformity, economical administration, better discipline, and a higher state of efficiency—all of which is included in the inspector's sphere of duty—adds to his efficiency and enables him, upon being assigned to higher inspection duty, to readily perceive what is lacking and where attention is necessary, so that the desired standard may be attained and the public interests properly safeguarded. The recent application of the general commanding the Department of the Missouri, illustrates that an experienced inspector should be thoroughly well fitted for the exercise of the most exacting duties. And it is a great source of pleasure to have so many of those who have served in the Inspector-General's Department during my administration and before, both as captains and field officers, receiving appointments as general officers—and eminently filling them—a slight recognition of their past most valuable and meritorious services in both the line and staff. Such names as Lawton, Hughes, and Sanger have gone from the roll of the regular establishment, and Otis, Chaffee, Hall, Kent, the Sumners, Baldwin, and Jesse M. Lee, the detailed inspectors-general. What has been accomplished by them, as well as by those who have remained in the Department, during the past years of most creditable duty, zealously, loyally, and effectively performed, is highly appreciated and gladly acknowledged. The system which produces such merit is worthy, when found, of making a note of.

During the active service of the last few years the loss of General Lawton upon a Filipino battlefield made a gap in our own ranks that all the Army and the nation felt. His services leave an example well to follow in all that is most soldierly. The corps has assiduously attempted to perform its full duty to the finish, but still some worthy

people criticise such men as remiss, though it serves to mark the critics at least as much as it can annoy or injure such soldiers.

The benefits from fearless, frequent, and faithful inspections working together for a common purpose and well directed, like a foot-ball team, have been illustrated in every branch of military duties, whether affecting the training and instruction of the officer, or the comfort of the soldier at the farthest front and amid all the discomforts of travel, when it too often seems as if every man's hand was against him; or the military outfit and qualities essential to the best success; or the handling of money and property and the care of stations and stores, upon which so much more than economy—even honesty—depends. The system established by Washington, Steuben, and Hamilton still serves its purposes well, aiding to its utmost to encourage excellence and to minimize all that is not good.

The following table shows in detail the amount of all the various classes of inspection duty performed by this Department, or under its auspices, since July 1, 1889, from which a very good idea may be obtained of the volume of the work performed and its growth. It indicates during that time the inspection of about half a million of men; and the simultaneous examination of property for condemnation amounting to over one hundred million of articles, of which about five million dollars' worth was saved to the Government; and the disbursements inspected amounted to nearly two billion of dollars; and it is believed that all those who founded or have encouraged the system, both since and prior to the adoption of our national Constitution, could hardly have expected more, and, with at least some of the results, our superiors have been satisfied. Though as quiet as dew, and falling upon all alike, it has not been ineffective, and has had the constant supervision and watchful and organized care that such successful team work always requires. But those who have felt the halter draw may speak evil of the work occasionally; though the most worthy have habitually sustained it and never found it too drastic, but have always been consistently appreciative.

Statement of work performed by officers of the Inspector-General's Department since July 1, 1889.

Fiscal year.	Money.		Property.				
	Number of inspections of money accounts.	Amount involved.	Number of inventory and inspection reports.	Total number of articles presented for inspection.[a]	Total cost, reported and estimated, of articles inspected.	Cost of articles condemned.	Cost of articles retained in service.
1889–1890	1,088	$57,659,630.26	1,934				
1890–1891	1,304	62,156,865.13	1,673				
1891–1892	1,516	67,233,897.40	1,212	183,554	$252,330.20	$201,566.75	$50,763.45
1892–1893	1,410	64,969,185.49	2,442	1,775,059	630,368.86	427,695.70	202,673.16
1893–1894	1,468	65,667,718.74	2,392	2,150,179	755,291.61	662,474.75	92,816.86
1894–1895	1,145	76,119,201.05	2,212	2,152,003	863,271.43	685,695.35	177,576.08
1895–1896	881	72,098,368.53	1,634	4,879,121	1,332,206.50	1,235,955.65	96,250.85
1896–1897	943	70,184,472.94	1,731	3,382,088	2,459,251.61	1,662,956.98	796,294.63
1897–1898	713	62,568,713.32	1,592	1,779,870	1,706,014.93	914,669.83	791,345.10
1898–1899	946	350,855,522.75	3,425	9,380,070	2,733,686.21	2,418,076.27	315,609.94
1899–1900	1,406	287,700,522.05	3,521	54,134,386	10,009,897.93	8,689,350.88	1,320,547.05
1900–1901	2,433	378,774,211.76	6,168	22,516,219	6,372,200.35	5,830,128.59	542,161.76
1901–1902	1,513	245,356,306.78	7,503	13,541,545	5,078,079.38	4,533,874.94	544,874.94
Totals	16,766	1,861,344,586.18	37,439	115,874,094	32,192,689.01	27,262,445.69	4,930,913.82

[a] Including units of weight and measure. No inventory and inspection reports were received at this office prior to February, 1892; and the supply departments have not furnished the information.

Statement of work performed by officers of the Inspector-General's Department since July 1, 1889—Continued.

Fiscal year.	Posts and commands.	Ungarrisoned posts, depots, hospitals, arsenals, soldiers' homes, etc.	National cemeteries.	Colleges.	Recruiting rendezvous and stations.	Special investigations and reports.	Transports.	Total inspections.	Number of students inspected.	Number of persons inspected exclusive of students.
1889–1890	117	21	.....	48	.....	.....	.....	3,208	.....	.....
1890–1891	87	109	61	53	36	21	.....	3,344	.....	.....
1891–1892	95	80	79	79	42	44	.....	3,147	.....	.....
1892–1893	91	72	43	78	23	26	.....	4,185	.....	.....
1893–1894	90	50	51	82	27	28	.....	4,188	.....	31,693
1894–1895	55	45	12	38	17	25	.....	3,549	.....	35,271
1895–1896	82	57	11	104	3	7	.....	2,779	13,011	40,161
1896–1897	80	69	52	82	29	13	.....	2,999	12,645	42,748
1897–1898	65	37	8	.....	11	.....	.....	2,426	.....	.....
1898–1899	91	148	34	2	21	31	.....	4,698	.....	.....
1899–1900	199	70	33	91	55	575	73	6,023	7,311	135,955
1900–1901	864	229	47	82	68	194	248	10,333	7,448	73,937
1901–1902	557	101	33	114	81	136	128	10,192	10,109	54,497
Totals	2,473	1,088	464	853	413	1,100	449	61,071	50,524	414,262

It will thus be seen that more than 61,000 inspections were made in the thirteen years considered—an average of about 4,695 per year, including nine years of peace and a small military establishment.

To say that these duties were arduous and exacting, would only be to repeat what is already well known throughout the Army; and that they have been performed with the greatest zeal and fidelity by the officers upon whom they have devolved is believed also to be sufficiently in evidence. It need not be pointed out which part of this work has been more effective or attracted most attention: but it will be easy for any to believe that throughout the length and breadth of the military service it has borne good fruit.

The following table shows how this work was distributed among the inspecting officers much as the disbursements among paymasters are annually indicated in the reports of the Paymaster-General.

It may be noted how few men in such a group saw service in our civil war, and how the relative rank of these excels that of many who are now pressing to the front. This is equally noticeable throughout the Army, and while leadership in battle is intrusted confidently to the old veterans, whose scars prove their trustworthiness and whose experience amid every exigency of war is valuable, still the places which knew them will know them no more forever, and their services become as a tale that is told: those who replace them doubtless have equal merit.

Summary of work performed by officers of the Inspector-General's Department during the past year.

Officers.	Disbursements.		Posts.	Ungarrisoned posts, Soldiers' Homes, Branches, depots, hospitals, arsenals, and prisons.	National cemeteries.	Colleges.	Recruiting rendezvous and stations.	Special investigations and reports.	Inspections of property.	Transports.	Total inspections.	Ascertained cost price of property inspected.	Number of students inspected.	Number of persons exclusive of students.			
														Inspected in ranks.		Absent.	
	Number of inspections.	Amount involved.												Officers	Men.	Officers.	Men.
Brig. Gen. J. C. Breckinridge	10	$963,776.42	53	5				2			70				[a]10,345		
Col. G. H. Barton	5	1,050,709.97	4	2				21	116		148	$101,337.25		61	1,433	38	780
Col. P. D. Vroom	74	15,682,155.24	16	9	5		4	1	125		217	96,353.19		109	3,149	29	841
Col. J. P. Sanger	2	70,543.16		3				6		3	14						
Col. E. A. Garlington	110	15,988,973.54	7	4	9		16	9	103		258	153,565.15		97	2,130	36	769
Lieut. Col. C. B. Heyl	86	50,589,040.97		6			7		25		124	29,284.23		1	49		69
Lieut. Col. Thos. T. Knox	22	12,248,272.10		10	5		1		5		43	2,778.22			[b]11,955		
Lieut. Col. S. C. Mills	21	10,891,234.09		6		1	2	8	106	27	171	201,511.96	104				
Lieut. Col. J. L. Chamberlain	91	41,820,069.29	10	10	1	3	2	18	114	19	268	212,302.15	262	100	2,633	48	1,599
Detailed under act of Feb. 2, 1901.																	
Maj. J. M. K. Davis	48	5,203,519.04	18	14			8		92		180	25,116.90		64	1,894	23	836
Maj. E. D. Thomas									2		2	5,218.03					
Maj. F. A. Smith	38	2,587,961.66	32	1				8	64		143	48,491.61		35	1,537	31	1,604
Maj. Jas. S. Pettit	11	747,567.14	6						91		111	29,861.58		1	81	2	94
Maj. H. K. Bailey	13	7,818,915.18	4					7	115	2	171	12,923.15		54	1,331	62	1,237
Maj. Frank West	35	817,470.64	22	1				4	84		147	28,108.65		74	1,161	47	1,037
Maj. R. D. Potts	21	7,058,181.63						6	105	26	161	214,837.95					
Maj. Alfred Reynolds	38	3,697,282.89	8	1		7	3	3	75		155	27,736.28	378	60	1,502	21	509
Maj. T. R. Adams	35	2,309,540.37	7	2	2	3	2	5	84		140	42,170.66	432	77	1,658	39	484
Maj. J. A. Irons	46	3,380,665.87	12	2	1	1	1	2	98		166	19,451.67	182	111	2,433	75	1,066
Acting inspectors-general.																	
Col. Simon Snyder									3		3	3,110.25					
Lieut. Col. L. H. Rucker	57	1,291,575.00						3	66		126	20,777.58					
Lieut. Col. S. M. Mills									20		20	4,562.65					
Lieut. Col. D. B. Wilson	3	831,076.61		2				2	2		9	631.95					
Lieut. Col. W. S. Edgerly	19	3,514,322.57	3					2	117		141	118,955.44					
Lieut. Col. L. H. Strother	37	2,827,158.79	7	11					107		162	25,767.69					
Maj. Philip Reade	6	21,828.48							6		12	3,942.65					

[a] Includes officers.

[b] Officers and men at the various branches of the National Home for Disabled Volunteer Soldiers.

Maj. H. E. Tutherly	62	$10,083,173.66	16	2		6	1	1	102	1	191	$37,202.10	282	68	1,809	23	641	
Maj. J. D. C. Hoskins	61	7,322,077.02	10	5		7	13	3	105	1	205	29,564.67	729	115	2,592	54	902	
Maj. Henry Wygant									21		21	4,557.40						
Maj. F. H. French	18	887,542.56	15	1				3	89		186	40,119.07		81	2,033	72	1,746	
Maj. A. L. Dade	13	214,363.20	9	1					93		117	27,037.12						
Maj. E. B. Bolton	51	562,217.88	70					1	236		357	78,614.89		119	2,578	88	2,066	
Maj. F. K. Ward	70	341,253.22	69	1				1	125		264	60,696.91		128	2,207	85	1,953	
Maj. C. W. Mason	12	9,110.66	11						14		37	3,705.26		30	581	19	452	
Maj. F. F. Eastman	7	17,901.63	17					2	58		87	36,749.00		19	1,255	35	681	
Maj. C. K. McGunnegle	23	811,674.52	5					2	93		123	54,585.11		26	676	23	391	
Maj. E. B. Fuller	32	1,128,099.99						1	72		105	46,643.23						
Maj. L. C. Scherer	2	28,790.47	6						49		57	17,632.48						
Maj. C. H. Watts	17	145,584.85	48					1	55		121	29,009.89		29	837	37	828	
Maj. J. C. Gresham				1						1	2							
Maj. H. P. Kingsbury	5	3,196,282.84								3	8							
Maj. W. H. Johnston			7						27		38	6,318.48						
Maj. G. H. Preston	1	11,323.37																
Capt. A. B. Dyer	16	2,533,386.99						4	21		22	1,947.65						
Capt. J. B. Erwin	88	2,399,175.81	0		5		1		27	8	55	37,297.78						
Capt. S. A. Cloman	57	1,117,353.76	24						92		145	63,523.84		96	2,556	41	1,178	
Capt. Omar Bundy	16	2,905,727.02	3						54		135	13,498.14		68	2,291	40	1,836	
Capt. E. D. Hoyle	81	17,834,209.74	14	4	1	11	15	2	78		97	17,106.36						
Capt. F. W. Sibley	3	368,687.60							117	2	282	245,771.20	1,942	105	2,264	21	730	
Capt. G. W. Ruthers						1			9		12	8,415.27						
Capt. P. W. West									8	5	14	2,512.33	587					
Capt. W. M. Wright	3	567,583.18			2				34		34	14,931.15						
Special inspectors	26	1,290,916.66	1	1	2	71	3		11		16	11,671.32						
Total	1,513	[a]245,356,306.78	582	105	33	114	81	136	7,503	[b]129	10,192	4,474,118.64	10,109	[c]1,763	[c]65,081	[b]987	[c]24,381	

[a] In many cases this includes more than one inspection of the same funds.

[b] This number includes more than one inspection of the same transport.

[c] These numbers, in some instances, include more than one inspection.

During the year there were 10,192 inspections of various kinds made by officers of this Department—permanent, detailed, and acting—or about 28 per day, including Sundays. But there are hardly 28 officers designated by law to do this duty; so the cooperation of all to attain the best results for the public service is demonstrated. And what the Army has accomplished proves that the best military results were fairly attained and much that is outside the strict tenets of their profession was often successfully required of these well-trained and disciplined men, with benefit to all concerned.

To be fully effective before ultimate filing, some of these reports call for the action of several bureaus and submission to higher authority, as for instance the hundred items submitted in relation to the fortifications prior to the recent maneuvers around New London, Conn. But no stone is left unturned that can help insure that every one of the thousands of items reported will receive due consideration and complete remedial action, and also that the condition and comfort of the troops wherever located are as perfect as the means at hand will permit.

Following his previous custom, the Paymaster-General of the Army, in his annual report for the fiscal year 1902, states that the mileage paid for the inspection of the Army was $52,749.71, and that of this amount only $8,446.39 was paid to officers of the Inspector-General's Department, which is less than one-sixth of the whole amount. This is but one indication how much more economical is the general inspection of the Army, so widely scattered, than any other specific system. The economy as well as the efficiency of the general inspection should be duly and fully considered.

ARMY TRAINING AND INSTRUCTION.

As to the Army economy, efficiency, instruction, or discipline, recent orders from the Honorable Secretary of War (General Orders, No. 85, 1902, Headquarters of the Army) indicate that a serious and persistent effort by all hands to elevate it to a higher condition than ever before attained is more than contemplated—it has begun. Some special reasons and need for this effort are there given.

General Orders, No. 155, Headquarters of the Army, November 27, 1901, referred to in the order above cited, establishes a comprehensive system of training and general instruction for officers of the Army; and it seems a very progressive step and one fraught with the largest promise of beneficent results. Beginning with the War College, at Washington Barracks, D. C., for the most advanced instruction, the system embraces also a General Service and Staff College, at Fort Leavenworth, Kans.; and such special service schools as the Artillery School, at Fort Monroe, Va.; the Engineer School of Application, at Washington Barracks, D. C.; the School of Submarine Defense, at Fort Totten, N. Y.; the School of Application for Cavalry and Field Artillery, at Fort Riley, Kans.; the Army Medical School, at Washington, D. C.; and at each military post an officers' school for elementary instruction in theory and practice as well as the company or other noncommissioned schools, and even the children have opportunities given them. All these (taken in connection with the Military Academy and actual service), embracing, as they do, almost or quite every phase of military life, theoretical and practical, even to minute details, when once fully organized and in active operation, would hardly seem to leave any-

thing to be desired in the way of instructing and training the young officers of our Army and every individual in touch with it—the more especially so since these institutions have received the approval of Congress, which has made liberal appropriations for their maintenance and support; even the officers detailed at colleges are to actually have another national duty to perform.

Those who remember how meager instruction once was at our military posts, and that such great names are associated with the establishment of these special military schools as General Grant with reviving the Artillery School at Fort Monroe when he was General Commanding the Army, and General Sherman establishing the Infantry and Cavalry School at Fort Leavenworth, and General Sheridan establishing the Cavalry School of Practice at Fort Riley, may well be thankful that they have seen this day, and that the reign of the sutler has been wholly abolished at last. The spirit of the new system seems to be that the brightest minds will always have an opportunity to apply themselves and be recognized; and even the dullest will acquire and perform all it can. Can the future fulfill such promises?

The excellence of our Army in 1897 as a fighting force may possibly never be excelled, at least for some years to come; as it had all the benefits of the best instruction and discipline that civilization can give, and all that experience on our illimitable mountains, deserts, and plains against the aborigine could give—one of the most redoubtable, ruthless, and indomitable foes any soldiers ever faced. That period has gone forever; and is almost as difficult to appreciate by the coming generation, who miss the experience, as are the Crusades. The total per capita expense in 1897 was estimated as about $934.71, and last year it was announced as $1,014.66. Similarly the property submitted on inventory and inspection reports for condemnation amounted to $99.09 and $103.54. Say this is an increase of about 5 per cent, how many millions are indicated in the aggregate by such difference per capita are easily calculated, and doubtless as easily explained if thought worth while. The expense of such warfare in remote, difficult, and uninhabited regions can probably only be rivaled now in Alaska, where the price of an egg sometimes seems phenomenal, and the propriety of having desiccated eggs for sale is questioned by those who do not have to try to exist there.

Under paragraph 969, Army Regulations, the Military Academy and the service schools (in so far as the latter are distinct from the posts) are to be inspected under specific instructions given in each case by the Secretary of War or the Commanding General of the Army. The benefit of regularly recurring inspections by officers of this Department is generally recognized, as the communication of the general commanding the Department of the Missouri of September 22, 1902, evidently beareth witness, and the regular inspection of all these colleges and schools by officers of the Inspector-General's Department when on their annual tours is entirely feasible, and also specially whenever the Honorable Secretary of War may desire.

MILITARY COLLEGES.

The conditions of foreign war and of insurrections in distant island possessions, which have confronted the Army during the past four years, very naturally interfered to a considerable extent with the detailing of officers in active service as professors of military science and tactics

in civil institutions of learning. The officers were needed at the front, and so the colleges, to a great extent, had to be temporarily neglected for weightier matters that were pressing. With the advent of a more settled state of affairs, the important duty of imparting military instruction at these institutions is again claiming and receiving its due share of attention, and the number of officers detailed at them has been gradually increasing. For the past year there were 74 of them as against 54 for the preceding year. None were inspected in 1898.

The question as to what is the best method to derive full benefit for national, patriotic, and military purposes in these colleges is an absorbing one, and may deserve the most careful consideration and every effort toward still further improvement; though the suggestion that all but purely military schools be abandoned is not concurred in and could hardly be seriously considered. Nothing affords a better basis for superior military training and the constant excellence of officers than broad and catholic culture, as the Germans have clearly demonstrated. And if the utmost possible can be grafted and accomplished at our leading institutions of learning, and creditable results obtained, the whole country should feel the benefits in proper military knowledge.

Something more and better may be accomplished now under General Orders, No. 94, Adjutant-General's Office, current series, than the utmost that seemed possible for these institutions in 1890, when General Orders, No. 15, Adjutant-General's Office, for that year, were promulgated. So General Orders, No. 94, are timely so soon after a successful foreign war, and in view of the demand for more officers than our Military Academy habitually turns out. To confine commissions wholly to its graduates, even at the possible risk of narrowing the selection or alienating the Army from the warmer sympathies of our people, has some advocates; but it seems that a broader and more liberal system should prevail. If a dozen vacancies were filled every year by competitive examinations of these college graduates, it is believed encouragement would be given them and a fine class of officers be obtained for our military service. Is not the time ripe for this? Certain colleges need some such practical result.

Since General Orders, No. 15, Adjutant-General's Office, 1890, were issued, great improvements have been effected in various directions. The gross growth is sufficiently evident; and an equal or greater improvement in quality seems now provided for. What, if any, deterioration is evident within recent years—say five—is perhaps less important and may not need to be set forth in current reports, since steps for improvement have already been taken.

Military professors.

There are 119 colleges that are furnished with Government arms and equipments, and for the last fiscal year 74 of these had officers of the Army detailed as professors of military science and tactics, and all but two of these were retired officers. From inspection reports received there seems to be a demand among these institutions preferably for young graduates of the Military Academy as instructors instead of retired officers, a want which may now be readily supplied under General Orders, No. 94, Adjutant-General's Office, current series. But it should be borne in mind that officers of mature age and ripe experience, if of equal natural ability, are apt to carry more weight and receive more considerate attention than mere callow youths, fresh from the schools, from such learned men as habitually compose our college faculties.

Among the military professors at these institutions of learning last year, five grades of rank were represented—there being 2 colonels, 3 lieutenant-colonels, 12 majors, and 31 captains; the remainder being first lieutenants.

As a rule, these officers were satisfactory in nearly every way and in harmony with both students and the faculty and well sustained by the faculty; but in some instances exceptions were noted by the inspectors. It was stated of one officer that during the year he "has rarely been present at the school, and has not even resided near it. During the year he had personally superintended no drills or recitations." Fortunately, such cases as this are extremely rare and are easily remedied when called to attention. To ameliorate the injuries to the regiments from absenteeism, can not the law authorize these one hundred officers additionally to the regimental force and so protect the colleges from such interruptions as they have recently experienced for successive years in their military curriculum—and also establish for them the same methods of property accountability as are adopted at West Point and in the Army, and allowances for these professors equal assistant professors there? These institutions are established by law and naturally become an essential part of the national military system, and seem fairly entitled to equal consideration and constant provision.

Students.

Sixty-five colleges report an aggregate capacity of 40,290 students so far as specifically reported; for some of them reported their capacity as "unlimited." At these institutions there were 33,283 male students actually enrolled, of whom more than 31,000 were over 14 years of age.

In the military departments of these colleges there were 14,625 young men enrolled so far as reported, maintaining an average strength of 12,336; and they ranged in age from about 14 to 24 years.

What is the military spirit of these institutions or the military information or discipline they can or care to impart does not depend wholly or principally on the detailed professor of military science and tactics, but largely upon the interest of the governing power of the institution, its faculty, or board of trustees. But the army officer must do his part tactfully and creditably.

Organization.

These military students were organized, at the different institutions, into 4 regiments, 53 battalions, and 206 companies, with 214 field and staff officers, 877 line officers, and 9,649 noncommissioned officers and privates.

Drills.

During the year these various organizations had the following number of drills, viz: 7,274 infantry, 1,407 artillery, 536 cavalry, 128 competitive, 833 signal, and 131 exhibition drills; showing that attention to the infantry exercises far exceeded that given all the others.

Parades.

They had also during the same time 1,029 dress parades and 127 street parades.

Field work.

Several problems in minor tactics were also worked out at some of the institutions, and there were 53 practice marches, and 55 encampments were held.

Guard mounting.

It was reported that guard was mounted and maintained daily at nearly all these institutions. At one or two of them guard mount was had during only a month or so of the school year.

Target practice.

So far as reported, target practice was had 417 times at twenty-two of the institutions—none being had at the others. The "shoots" were said to be well attended when held. There were also numerous gallery practices.

Such items may indicate the dry bones of a graded system. But to breathe into it the breath of life and let the nation find in this body of instructed youth a recourse against the day of public war, with all the devotion and sacrifices it calls for, and some of that guidance in military matters which every neighborhood then needs, presents a problem which deserves earnest, patriotic effort to fully solve against that day.

In this connection it may be suggested that any intercollegiate military contest that might be established, and held annually at some convenient time and place during the college year, would most certainly prove a very effective stimulus to the interest of the military students in their military duties. Target practice, or firing, seems the most practicable feature to employ in developing a friendly intercollegiate rivalry; and, with a suitable prize offered to the winning college target team, could hardly fail to arouse similar and perhaps even as much interest as the intercollegiate boat races, football, fencing, and baseball matches, over which students become so enthused. This would add a quickening impulse to their interest in and zeal for their military duties generally; and, it is believed, would prove in every way beneficial to them and through them to the country at large. Or if representative squads or organizations from some of these institutions could assemble for competitive drill and maneuvers, something more might be learned or greater interest be aroused. But some professors might feel that the interest was too great if not in their particular courses.

Theoretical instruction.

At some of the institutions it was reported that no theoretical instruction in military science was given; but as a rule it was. At 14 colleges there were 195 recitations during the year in The Art of War; at 53 colleges there were, so far as specifically reported, 1,266 recitations in Drill Regulations; and at 17 colleges there were 95 recitations on the Organization and Administration of the Army. At nearly all of the colleges the professors of military science and tactics delivered lectures to the cadets on military subjects, and it was reported that 616 such lectures were delivered during the year. The recitations and lectures were stated to be generally well attended by the military students. Perhaps it would be of more consequence if it could be announced that any dozen of these thirty-odd thousand had fairly mastered the preliminaries of the profession of arms and were ready to enter its ranks with every confidence in a creditable career. If an opening is given, there is just confidence that this can be attained.

Productiveness.

From the 65 colleges reporting it is learned that they furnished officers, noncommissioned officers, and privates as follows to the Regular and Volunteer armies, from their former students, in recent wars:

General officers, 29; colonels, 32; lieutenant-colonels, 45; majors, 66; captains, 283; lieutenants, 489; noncommissioned officers and privates, 1,191; total 2,135. In addition to this, they furnished to the Navy and Marine Corps 62 officers and 178 warrant officers and enlisted men (total, 240) a grand total furnished to Army and Navy combined of 2,375. Can not a larger record be confidently relied upon in the future? But this demonstrates patriotism in the past.

If any argument is still needed to show the vast importance of

military training and instruction in civil institutions of learning, these figures may help to supply it. The possible and actual beneficial results of such instruction and training, properly given, at such institutions, are not to be depised to-day, and contain the promise of greater things. It is undoubtedly one of the best of the means, in a country like ours, which will always have a small standing army, of promoting preparation against future wars: and lack of due preparation is possibly our greatest military weakness. The thousands of young men going forth annually from these institutions pervade every nook and corner of the land throughout all its length and breadth. With such a reserve, trained and instructed, and fitted to at once assume the duties of company officers and noncommissioned officers, much of the work of preparation will always be already performed before the wars come, or at least there will always be a little leaven ever present.

General conditions.

The military departments of some of the colleges were very highly commended by the inspectors; and perhaps an equal or greater number were as severely criticised, or the withdrawal of the military detail recommended. At most of the institutions the conditions were satisfactory and discipline good. Several of the inspectors recommended, as an incentive to the students, the appointment each year of at least one second lieutenant in the Regular Army from one of the colleges in each State; and it was also suggested that it would have an admirable effect if the military course should be made necessary to graduation in each of the schools receiving Government aid.

The military professor at St. John's College, Annapolis, Md., says:

Military education at schools and colleges should be encouraged and assisted by the United States Government by all means possible. As a rule, the martial spirit will be found to be the best and most encouraging at colleges that are poor in funds, as well as the students. Congress might be prevailed upon to appropriate a sum every year that allowed the expenditure of $25 for each cadet in the military department of all schools and colleges that have a Regular Army officer as instructor. This amount would furnish every cadet with a uniform complete. It would be money well invested. The next most important matter in connection with college military education is for the War Department, under the present regulations and laws, to supply these colleges with the rifle and equipment as now used by the U. S. Army. The four years of instruction in handling this rifle will enable our college graduates to teach and instruct others how to use this rifle effectively, and care for it. An army composed of well-schooled riflemen is the army that will be successful. These colleges can supply many efficient and valuable volunteer officers, as well as for the regular service, in time of need, and it can be easily realized how important it is to have them well instructed in the use of the arms they will be supplied with. It is a pure waste of time, labor, and money to use obsolete arms and equipments.

Maj. Alfred Reynolds, U. S. Infantry, inspector-general, says:

The military schools throughout the country have all the students they can accommodate. It would increase the importance of State military schools if graduation from them was made the first qualification for admittance to the Army from civil life; and, better still, if one or more students making a distinguished record might, at their option, take the course at the service schools, with the reward of commissions in the Army on successful graduation. The military department in the State schools in this case should comprise a course which would qualify for promotion to first lieutenant.

Maj. H. E. Tutherly, Eleventh Cavalry, acting inspector general, says:

When a land-grant college really takes hold of military instruction, I believe there is no better service that a young graduate of West Point can be put to than that of modeling a battalion in each State after the corps of cadets at West Point. We have one of these land-grant colleges now, I think, in each State, and at them all there are from 10,000 to 20,000 students taking mathematical and scientific courses

very similar to that of West Point, and if 45 officers can work in West Point methods to these 45 battalions, it is obvious that this scheme contemplated in the Morrill act of 1862 can become an adjunct scheme to West Point, reaching yearly from 10,000 to 20,000 students in the States, in addition to those sent to the Military Academy at West Point by Senators and Members of Congress. Thereby the War Department will be able to work back the instruction at our new War College, army schools at Leavenworth, Fortress Monroe, and West Point, until we may have a uniform system of military education through the country, so that the so-called "citizen soldiers" will readily assimilate with the Regular Army when suddenly mobilizing for war.

Lieut. Col. J. L. Chamberlain, inspector-general, says:

This is an important question, and one which should receive consideration by the War College, or the General Service and Staff College, with a view to regulating instruction to be given.

As matters now stand, each institution follows its individual ideas as to military instruction, which ideas are in some instances not wise, and the great advantages to the country which might be secured by such instruction is, in a measure, defeated.

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AMERICAN TROOPS AND THE FILIPINOS.

There has been a good deal of discussion in the public press and elsewhere concerning the treatment of the native Filipinos by the American troops, and some rather serious charges have been brought against the Army, which, however, have not been substantiated. The conditions of war in the Philippine Islands have been, perhaps, unusual, and from reasons arising from the conduct of the Filipinos themselves, who, as the authorities agree, are sometimes extremely cruel and treacherous. In the conduct of the American Army toward them the exercise of unexampled patience is claimed, and the humanity of the troops engaged has no parallel in the history of dealing with Asiatics.

With what novel duties in both civil and military administration, and in the terrain and character and environment of the war, on the opposite side of the globe, have our soldiers been brought in contact? The world has felt the current of those distant affairs, and our nation may not be fully conscious of the awakening. Who among us on the day of the battle of Manila Bay were familiar with the names of men who had faithfully devoted long lives to our service, not without some dangers by land and sea—and now how the character of the nation has been weighed in the balance according to their words and deeds. Merritt, with youthful fame in the Shenandoah and the Great Plains, appears in his maturity on this last scene; Otis, of honest judgment, far-reaching insight, and a cormorant for work, bearing his honorable wounds with all modesty; Bates, the gentleman and soldier, the right hand of his chief in diplomacy or emergency; Wheaton, the thunderbolt and embodiment of military ardor; MacArthur, judicious, courageous, masterful, and broad minded; Hughes, acute and resolute amidst an attempted Moscow and in the rugged places of Samar and the middle islands; Funston, who won his fame amidst the hardships of the farthest front; Young, forever in the lead and seeking the vitals of the enemy; Smith, tireless and aggressive; Bell, courteous and recklessly audacious, the prince of the advance guard; Lawton, "*droit et loyale*," who baptized that land with his blood, and wrought famously and kindly on both hemispheres, doing easily and without undue sacrifice whatever was most needed or most difficult; Chaffee, whose sterling worth has been displayed in the Old and New Worlds, wherever American arms have brought her principles, and won success either in the whirl of repelling deadly tyranny from the Antilles or in bringing safety to

the beleaguered legations from the bloody Manchus of the Forbidden City; Davis, whose omnivorous industry and knowledge have wrought memorable monuments in the form of city government and great memorial structure, as well as in his profession; Grant carried from Porto Rico to the Far East a name Americans regard as the epitome of unpretentious and admirable service, and has shown unwearied work and fairness in every scene; and Baldwin, the last to win a star for worsting the enemy in fierce fight, in a career filled with such bearing as brought two medals of honor for soldierly courage to him alone. When the rewards of service go to men like these the heart of our Army is elate. These are not half the names, nor are all of them as well known to their fellow-countrymen as they deserve. But these are among those whom I met or the results of whose work I witnessed during the past year. Famous regiments which fought or endured amidst those scenes will cherish the occasion in their regimental traditions. And young men who hereafter take the oath to serve their country will recall how faithfully and well she was wont to be served when the old regiment first went down to the sea in great ships. The Army of the past has again proved here the mettle of which it is made, where the Navy and civil authorities have writ their names in bold characters among the immortals, and the Army of the future is taking step, and the spirit will go marching on still, as always, loyal and true and "steadfast to the end." There seems to be something pathetic as well as majestic in the attitude of the Army where it has done and deserved so well. Unknown it entered upon its duty there, and but half known it returns, its merits sterling as of yore.

The officers of the inspection corps in the Philippines substantially agree that extreme and frequent cruelty has not been habitually practiced, and that all well-founded complaints of excesses have led to trial and punishment of the offenders. Colonel Sanger (now brigadier-general of the line), who during the past year was inspector-general of the Division of the Philippines, says:

I am not inclined to believe that many of our regular officers and enlisted men have resorted to harshness and cruelty in dealing with the natives.

Major Eastman (Fourth Separate Brigade, Philippine Islands) says:

Judging from careful inquiry at every post in the brigade which I have visited, except here (Nueva Caceres), the relations between the natives and the troops are very pleasant. Some complaints have been made of abuses and assaults and crimes, but commanding officers, without a single exception, are zealous in investigating all such complaints, and, when there is a reasonable possibility of a successful prosecution, charges have been preferred and the accused men tried and severely punished. In no case have I heard or known of any disposition on the part of officers to condone the offenses of men under their command. On the contrary, they are earnest in their efforts to prevent and punish all crimes committed against the natives.

Major West (Fifth Separate Brigade, Philippine Islands) says:

The relations (between the Americans and natives) are usually pleasant, and the people almost invariably desire to have the troops stationed among them to protect them from ladrones. The money spent in the towns by the army is quite a consideration for the natives. There have been a few isolated cases of abuses of the natives by enlisted men, for which the latter have usually been tried and punished. Such occurrences are liable to occur in any country where soldiers are stationed.

INSPECTION.

It is believed that only good and beneficial results can flow or has proceeded at any time from the establishment by law of every detail of inspection duty appertaining to the military establishment, and

regularly assigned, under our republican system, to our legally established Inspector-General's Department. Surely there can be nothing more important than the recognition and encouragement of excellence and suppression or noting of errors and abuses in the transaction or administration of military affairs, both during the years of training and the days of campaign and battle; and this duty has devolved upon the inspection corps of our Army for more than one hundred and twenty-five years—since almost the inception of the American Revolution. The manner, and to a large extent the details, of inspection duty were recited and imposed in the beginning by specific acts of the Continental Congress and the results were beneficial beyond question, so that few names are more familiar in our early military history than that of Baron Steuben, the Inspector-General during the training and trials of Valley Forge and a commander in the Virginia campaign preliminary to Yorktown. Indeed, so highly was inspection prized, owing to what it had indisputably accomplished in the Revolutionary war, that in 1798, when this country was apparently on the verge of a war with France and a large army was authorized, Congress provided that its Inspector-General, Alexander Hamilton, should be a Major-General, and much that is excellent in our military system is of his devising at that period.

Our Army antedates the adoption of the Constitution in 1789, the artillery company, which Alexander Hamilton commanded as captain, being still in the service; and its inspection department has habitually existed as a separate corps; though for a while almost every organization disappeared and whimsical experiments were attempted, like forming a Legion. The most familiar name on the roll of inspectors-general, when the Spanish and Filipino war broke out, was that of Gen. Henry Ware Lawton, who was not so fortunate as to be made a general officer in the Regular Army, but whose indomitable energy and sterling soldierly character attracted the attention and admiration of his fellow-countrymen, and enabled him to attain the highest rank given as a volunteer officer.

That such a corps of inspectors-general is desirable, and should always exist, if the best results are to be secured, is doubtless fairly apparent to all in our country having experience in field service in war, and therefore are familiar with military affairs. It continues to perform the inspections of the Army and its affairs and conduct which were required by law in the Revolutionary war, and those required in addition by subsequent regulations; as, for instance, the act of March 3, 1825, which provides for the inspection of property that is to be eliminated from the public service; and the act of July 28, 1866, which provides that the Inspector-General's Department shall designate the articles to be kept for sale by the Subsistence Department; the act of April 20, 1874, provides for the frequent inspection of the money accounts of disbursing officers of the Army; and the acts of March 3, 1888, and August 18, 1894, which provide for the inspection of the Soldiers' Homes. The inspection of millions of articles, and disbursements amounting to hundreds of millions of dollars, and the universality of the inspection of every place, thing, and command may make these duties important enough in themselves. And all these inspections have been necessarily left open and elastic enough to meet every emergency and be felt in every sphere of military activity. And our remarkably perfect Army demonstrated the excellence of the inspection. This is believed to be the proper method in a free country,

and no other method of inspections can produce better results nor better suit the habits of freemen. It has proved, during all the heroic periods of American history, flexible enough to meet every demand, as well as possessing intact the impartial inflexibility of a fixed law, as all army duties do which have immemorial precedent to mold and guide them in peace and war. When the vital and important duties of inspection are absolutely imposed by law and provided for as the recognized and only specialty of an established corps, under no circumstances can they be evaded or rendered nugatory by individual whim or caprice; as might possibly be the case otherwise, especially at times when corruption becomes rampant. That they should be and are imposed by law and the customs of war in like cases seems so axiomatic as scarcely to require any extended argument. That the Treasury officials also audit the accounts and the local commanders make weekly or monthly inspections of the troops but supplements this annual or frequent work of ours, so that by the mouths of two witnesses every matter shall stand: nor is there any prospect of the Army being overtasked nor made too good for our country by the united efforts of all to perfect it.

Important as it is, however, that inspections should exist as now provided for by law and orders, this is not more important than that the inspecting officers should compose a separate and distinct department of the Army, as now, tied wholly to neither the line nor staff, so that inspections may be invariably fairly made, without bias, prejudice, fear, favor, or undue influences of any kind. Secretaries of War, commanding generals of the Army, and others in high authority in military affairs, from the days of Washington until now, have steadfastly maintained this view; and what has been said by them has been sufficiently repeated and accepted by the best of our statesmen and soldiers. Should, unfortunately, this well-approved method be abolished, it is evident that neglects and abuses now minimized may grow to impair the efficiency of the service or stain the honor of our arms. Such is the lesson of experience.

If inspections are to be made with thoroughness and a full and fair presentation of the result in all cases, then this can not be done more faithfully and effectually than by the Inspector-General's Department now, with the duties of the Department as originated under George Washington and reestablished by Alexander Hamilton and still clearly recognized by law and orders and by the best and honest interests of the public service. The effort to keep it in the highest state of perfection is constant, and something is pretty widely known as to what it accomplished in Cuba and in the Philippines, and in many points between; so it justly touches both the just and the unjust, as sent by higher authority. But of course not a moiety of the work done nor the difficulties of it can be widely known nor fully appreciated. Still, such as it is and has been, it must speak for itself, and there is a comfort in the feeling that the best soldiers have appreciated it best. Have these soldiers not been worthy?

In the battles which came upon us from such an unexpected quarter four years ago, and have run their course with the sun, even to the farthest East, it may be permitted our corps of inspectors-general to remember that everywhere it had a representative at the farthest front to share the dangers and hardships and witness the admirable bearing and heroism of our Army, which occupied the place it did and performed the work assigned, not from any whim of its own, but because it was the nation's formally expressed will that we should go

there in the cause of our country. In the death-roll that ensued no one found a warmer place in the hearts of his fellow-countrymen or struck a more responsive chord than the one taken from our list, and perhaps he may justly lead all others of the Army in that day when, recalling this epoch, our country counts her jewels. The nation knows our devotion to her.

Respectfully submitted.

J. C. BRECKINRIDGE,
Inspector-General.

The SECRETARY OF WAR.

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REPORT OF THE JUDGE-ADVOCATE-GENERAL.

WAR DEPARTMENT.
JUDGE-ADVOCATE-GENERAL'S OFFICE,
Washington, D. C., October 10, 1902.

Hon. ELIHU ROOT,
Secretary of War.

SIR: I have the honor to submit the annual report of the Judge-Advocate-General's Department for the year ending June 30, 1902.

The following data are compiled from the records received at this office of trials completed and published during the year covered by this report:

Commissioned officers tried by general court-martial:	
Convicted (sentences disapproved in two cases)	19
Acquitted	6
Cadets tried by general court-martial (convicted)	2
Enlisted men tried by general court martial (including a few cases of civilians serving with the Army in the field, and discharged enlisted men serving as general prisoners):	
Convicted (sentences disapproved in 158 cases)	4,854
Acquitted	430
Total trials by general court-martial	5,311

(Being 754 less than in the preceding year).

The following table shows, approximately, the number of convictions of different offenses by general court-martial during the year:

Sixteenth Article of War:	
Wasting ammunition	2
Seventeenth Article of War:	
Losing accouterments	45
Losing arms	15
Losing clothing	21
Losing Government property	1
Selling arms	2
Selling accouterments	5
Selling clothing	99
Spoiling horse, arms, accouterments, etc	7
Nineteenth Article of War:	
Disrespectful words against the President	2
Twentieth Article of War:	
Disrespect to commanding officer	84
Twenty-first Article of War:	
Assaulting superior officer	8
Disobeying superior officer	253
Disrespectful or threatening language to superior officer	8

Twenty-second Article of War:	
Inciting mutiny	1
Joining in mutiny	2
Twenty-fourth Article of War:	
Disobeying noncommissioned officer when ordered into arrest	3
Thirty-first Article of War:	
Lying out of camp or quarters	20
Thirty-second Article of War:	
Absence without leave	846
Thirty-third Article of War:	
Failure to attend drill, roll call, etc	346
Leaving ranks without permission	3
Thirty-fourth Article of War:	
Fouend 1 mile from camp without leave	1
Thirty-ighth Article of War:	
Drunkenness on duty	411
Thirty-ninth Article of War:	
Quitting post	72
Sleeping on post	263
Fortieth Article of War:	
Quitting guard	138
Forty-seventh Article of War:	
Desertion	1081
Fifty-first Article of War:	
Advising another soldier to desert	6
Fifty-fifth Article of War:	
Committing spoil	2
Fifty-eighth Article of War:	
Assault and battery with intent to kill	10
Assault and battery with intent to commit rape	5
Larceny	46
Manslaughter	6
Mayhem	1
Murder	12
Rape	12
Robbery	12
Sixtieth Article of War:	
Embezzlement	11
Larceny	57
Making false and fraudulent vouchers	1
Purchasing Government property	2
Selling Government property	25
Wrongful disposition of property	3
Sixty-first Article of War:	
Conduct unbecoming an officer and a gentleman	7
Sixty-second Article of War:	
Absence without leave not chargeable under the Thirty-second Article of War	85
Abandoning equipments	4
Abandoning horse	1
Abuse of authority	1
Abusing noncommissioned officer	5
Abusing public animal	15
Adultery	1
Aiding and abetting desertion	4
Aiding and abetting assault with intent to kill	8
Aiding and abetting larceny	16
Aiding and abetting robbery	1
Aiding prisoner to escape	6
Allowing prisoner to escape	64
Assault	65
Assault and battery	98
Assault upon commissioned officer	3
Assault upon noncommissioned officer	38
Assault upon noncommissioned officer in performance of duty	80
Assault upon sentry	11
Assault with dangerous or deadly weapon	67
Assault with intent to do bodily harm	30

Sixty-second Article of War—Continued.

Assault with intent to kill	36
Assault with intent to rape	7
Attempt at blackmail	1
Attempt at burglary	1
Attempt at larceny	12
Attempt at robbery	2
Attempt to commit sodomy	8
Attempt to defraud a private party	2
Attempt to desert	1
Attempt to defraud the Government	5
Attempt to disarm sentinel	2
Attempt to escape from guardhouse or confinement	12
Breach of arrest	140
Breach of trust	1
Breaking open locker	1
Burglary	11
Careless handling of loaded firearms	16
Carrying concealed weapons	7
Committing a nuisance	37
Conduct causing arrest by civil authorities	2
Conspiracy	1
Contempt of court	1
Creating an alarm in camp	2
Creating a disturbance	20
Creating disturbance in guardhouse	2
Damaging public property	3
Defrauding private parties	1
Destroying private property	14
Destroying public property	20
Discharging firearms without cause, endangering life	20
Disobedience of standing orders or regulations	110
Disobeying commissioned officer	87
Disobeying noncommissioned officer	425
Disarming sentinel	7
Disobeying sentinel	24
Disgraceful conduct; indecent, infamous, and unnatural practices	16
Disorderly conduct	65
Disposing of clothing	32
Disrespect to noncommissioned officer	119
Disrespect to sentinel	11
Disrespect to superior officer	37
Disrespect to late President	4
Drunk and disorderly	294
Drunkenness	174
Drunkenness, etc., causing arrest by civil authorities	21
Drunkenness incapacitating for duty	26
Drunk on duty	34
Embezzlement	27
Escaping from guard or sentinel	17
Escaping from guardhouse	12
Evasion of duty	8
Failure to pay debts	5
Failure to send correspondence through official channels	1
Failure to return borrowed property	8
False accusation	2
False pass, using	1
False statement or report	133
False swearing	2
Falsifying accounts	2
Fighting	25
Firing on civilians without cause	4
Forcing an entrance into private dwelling	26
Forgery	8
Fraud	8
Fraudulent enlistment	248
Gambling	6
Giving liquor to prisoners	2
Harrassing, annoying, and looting natives and citizens	38

Sixty-second Article of War—Continued.

Having possession of intoxicating liquor	3
Impersonating an officer, sentinel, or patrol	1
Indecent conduct	24
Indecent exposure of person	3
Incendiarism	1
Insubordinate conduct toward commissioned officer	85
Insubordinate conduct toward noncommissioned officer	71
Interfering with noncommissioned officer in performance of his duty	7
Interfering with sentinel	5
Intimidation of witness	3
Introducing liquor into camp, quarters, etc	37
Larceny	420
Leaving post	39
Leaving post and abandoning rifle	2
Leaving ranks without permission	8
Leaving hospital without permission	1
Losing arms, accouterments, etc., by allowing them to be captured	2
Making indecent proposals	3
Making and causing to be published a libelous statement	1
Making counterfeit money	2
Malingering	2
Manslaughter	3
Misuse of hospital supplies	1
Misappropriating and wrongfully disposing of public property	6
Misappropriating exchange funds	1
Mutinous conduct	2
Neglect of duty	179
Obtaining money or property under false pretenses	9
Out of quarters after taps	3
Pawning borrowed property	2
Pawning Government property	5
Perjury	7
Permitting member of guard or prisoner to obtain intoxicating liquor	23
Receiving and disposing of stolen property	3
Refusing to perform duty	9
Removing cartridge belt without authority	5
Removing rifle or pistol without authority	5
Resisting arrest	73
Resisting arrest by civil authority	3
Resisting being disarmed	3
Resisting noncommissioned officer	5
Resisting sentinel	1
Robbery	30
Selling company property	1
Selling, losing, or wasting Government property	19
Sleeping while on duty	5
Sodomy	4
Striking noncommissioned officer	35
Striking sentinel	4
Threatening civilian	25
Threatening noncommissioned officer	50
Threatening to kill	20
Threatening sentinel	9
Threatening soldier	5
Threatening superior officer	10
Threatening to do bodily harm	9
Trading in stolen goods	3
Unauthorized carrying of arms	1
Using insubordinate language	40
Using disloyal language	1
Using insulting and abusive language	98
Using profane and indecent language	98
Using threatening and abusive language	69
Uttering forged paper	2
Wasting food	2
Disorder, etc., charged as "conduct to the prejudice of good order and military discipline" (not included under previous heads)	106

The number of men sentenced to dishonorable discharge was 2,645.

Death sentences were imposed by courts-martial in 8 cases of enlisted men; 4 of these sentences being on conviction of murder, 2 on conviction of desertion and of entering the service of the enemy, 1 on conviction of desertion alone, and 1 on conviction of robbery and larceny of United States arms and of attempting to steal ammunition after desertion. The sentences were executed in 3 cases of murder, and in the other cases were commuted to dishonorable discharge, forfeiture of all pay and allowances, and imprisonment at hard labor for life, in 4 cases, and for the term of three years in the remaining case of desertion only.

The following table shows, approximately, the convictions of desertion, classified according to the limits of punishment prescribed in the order of the President, published in General Orders, No. 42, Headquarters of the Army, 1901:

	No.	Limit of confinement.
		Months.
Surrendered:		
After an absence of not more than thirty days	67	12
After an absence of more than thirty days	166	18
Apprehended:		
In service not more than six months at time of desertion	558	18
In service more than six months	290	30
Total number of convictions	1,081	.....
Average limit of confinement	.....	20.85

In connection with this table it is to be observed that the limits of punishment are prescribed for "time of peace" only.

TRIALS BY MILITARY COMMISSION.

The records of military commissions received at this office during the year, covered by this report, show that 720 persons were tried, being 260 less than in the preceding year. Of this number 576 were convicted and 144 were acquitted. In 55 cases the sentences were disapproved. The following table shows, approximately, the offenses:

Abduction	12
Accessories before the fact to murder	5
Accessories after the fact to murder	6
Aiding and abetting public enemy	11
Aiding in murder	1
Arson	21
Assault and battery	31
Assault and battery with intent to do bodily injury	5
Assault and battery with intent to kill	43
Assault and battery with intent to rape	1
Assisting desertion	1
Attempt to rape	5
Being a spy	1
Being a war rebel	12
Being a war traitor	1
Consorting with the enemy	1
Consorting with outlaws	4
Conspiracy to defraud	1
Corresponding with the enemy	8
Deserting from the American Army and entering the service of the enemy	5
Disturbing the peace	1

Engaging in insurrection against the United States	3
Extortion under color of office	1
Giving information to the enemy	1
Guerrilla warfare	14
Inciting natives to treasonable acts	4
Kidnapping	90
Larceny	14
Manslaughter	39
Mayhem	1
Misconduct in office	6
Murder	332
Obtaining money under false pretenses	3
Organizing for robbery	14
Rape	9
Receiving stolen property	2
Relieving the enemy	2
Resisting arrest	1
Robbery	105
Threatening to kill	1
Treacherous conduct	3
Treason against the United States	2
Violation of the laws and usages of war	67
Violating oath of allegiance	17

Death sentences were imposed by military commissions in about 235 cases (nearly all natives of the Philippine Islands), on conviction of the more serious crimes named in the list, and the sentences were executed in about 128 cases. In the remaining cases the sentences were commuted to imprisonment for life or for a term of years.

Upon the recommendation of the Department the Eighty-third Article of War, which defines the jurisdiction of the several inferior courts in respect to their power to punish, was amended by the act of March 2, 1901 (31 Stats., 951), in such a way as to permit those tribunals to impose sentences of three months' forfeiture of pay, or three months' confinement at hard labor, or both, at the discretion of the court. The operation of this enactment has been to simplify the administration of military justice and to make it unnecessary to refer a considerable number of cases to general courts-martial for trial which prior to the adoption of the amendment were exclusively triable by such tribunals. In this respect it has continued to justify the expectations which were entertained as to its necessity and propriety when the matter was presented to Congress.

In closing this report it gives me great pleasure to recognize the efficient assistance which I have received from the officers of the Department in their different fields of endeavor, and from the employees, both permanent and temporary, who are attached to the Judge-Advocate-General's Office. Their labors have been zealous and untiring, and the services rendered by them have been entirely satisfactory.

Very respectfully,

GEO. B. DAVIS,
Judge-Advocate-General.

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REPORT OF THE QUARTERMASTER-GENERAL.

QUARTERMASTER-GENERAL'S OFFICE,
Washington, D. C., October 25, 1902.

SIR: I have the honor to submit the annual report of the operations of the Quartermaster's Department for the fiscal year ended June 30, 1902.

FINANCIAL STATEMENT.

By acts of Congress approved March 2 and 3, 1901, and February 14 and April 7, 1902, there was appropriated for the regular service of the Quartermaster's Department for the fiscal year ended June 30, 1902, the sum of		$57,666,340.00
During the fiscal year there was deposited to the credit of appropriations 1901–2 amounts received from sales to officers, etc		1,449,138.87
Making a total of		59,115,478.87
Of this there was remitted to disbursing officers	$31,366,379.20	
There was paid out on account of settlements made at Treasury for claims and accounts	119,218.58	
		31,485,597.78
Leaving a balance on July 1, 1902, available for payment of outstanding obligations incurred or fulfillment of contracts properly entered into within the fiscal year of		27,629,881.09
On July 1, 1901, there was on hand from regular appropriations for the service of the Quartermaster's Department pertaining to fiscal year ended June 30, 1901, the sum of		19,333,712.01
And from appropriations pertaining to previous fiscal years the sum of		12,257,644.73
And from appropriations for special and indefinite purposes, certified claims, etc		441,999.54
Making a total balance on hand of these appropriations of		32,033,356.28
For specific purposes there was appropriated during the fiscal year ended June 30, 1902	$1,965,269.66	
During the year there was deposited and transferred to credit of appropriations, other than those of 1902, as shown above, including the sum of $861,436.58 for Pacific railroads for years 1900, 1901, and 1902, and also the sum of $142.16 for transportation of volunteers, war with Spain, and the sum of $154.76 for reimbursement for bringing home remains of officers and others	3,874,707.80	
		5,839,977.46
Making a total on hand from these appropriations of		37,873,333.74
Of said amounts there was remitted to disbursing officers the sum of	$4,849,660.84	
There was paid out on account of Treasury settlements	1,447,995.01	
There was carried to surplus fund	11,956,459.12	
		18,254,114.97
Leaving a balance on hand July 1, 1902, of		19,619,218.77

RECAPITULATION.

Remitted to officers and paid out on Treasury settlements from appropriations for the regular service of the Quartermaster's Department for the fiscal year ended June 30, 1902	$31,485,597.78
From appropriations previous fiscal years and from indefinite and special appropriations	6,297,655.85
Total	37,783,253.63

Balance remaining in Treasury June 30, 1902, of appropriations for the regular service of the Quartermaster's Department for the fiscal year ended June 30, 1902	$27,629,881.09
And of appropriations for previous fiscal years and for indefinite and special appropriations	19,619,218.77
Total	47,249,099.86

Of the $200,000 appropriated by act of May 13, 1902, for "relief of citizens of the French West Indies," there has been charged against the same on the books of this office during the fiscal year 1902 the sum of $22,231.99. Of the $10,000 appropriated by act of February 2, 1901, for "surveys of camp grounds for instruction of troops," there has been charged against the same on the books of this office during the fiscal year 1902 the sum of $2,000. Of the $200,000 appropriated by act of December 18, 1897, for "relief of people in mining regions of Alaska," there has been charged against the same on the books of this office during the fiscal year 1902 the sum of $1,038.86.

DUTIES OF THE QUARTERMASTER'S DEPARTMENT.

Under existing laws the Quartermaster's Department, under the direction of the Secretary of War, provides the Army with military stores and supplies requisite for its use, such as clothing and equipage, tents, band instruments, tableware and mess furniture, equipments for post bakeries, fuel, forage, stationery, lumber, straw for bedding for men and animals, all materials for camp and for shelter for troops and stores, furniture for barracks, such as bunks, benches, chairs, tables, lockers, heating and cooking stoves for use in public barracks and quarters, tools for mechanics and laborers in the Quartermaster's Department, furniture, text-books, papers, and equipment for post schools, reading matter for post libraries, wagons, ambulances, carts, saddles, harness, water supply, sewerage, plumbing, illuminating supplies, and heating for all military posts and buildings.

The Department is also charged with the duty of providing transportation, by land and water, for troops, munitions of war, equipments, and all articles of military supplies from the place of purchase to the several armies, garrisons, posts, and recruiting places.

Under act of Congress amending section 1661, Revised Statutes, for arming and equipping the militia, this Department supplies quartermaster stores, clothing, and equipage to the militia of the several States and Territories, and transports the same to said States and Territories. It also furnishes transportation for ordnance and ordnance stores issued by the United States to the militia of the several States and Territories. It also transports the property for other Executive Departments on requisitions, payments therefor being made by the respective Departments, to the carriers upon accounts forwarded through the Quartermaster-General's Office for that purpose.

This Department prepares the necessary plans and constructs all buildings at military posts, such as barracks, quarters, storehouses, hospitals, etc.; builds wharves; constructs and repairs roads for military purposes; builds all necessary military bridges; provides, by hire or purchase, grounds for military encampments and buildings; contracts for all horses for cavalry, artillery, and for the Indian scouts, and for such infantry and members of the hospital corps in the field campaigns as may be required to be mounted; pays for all incidental expenses of the military service which are not provided by other corps.

The care and maintenance of national cemeteries is an additional duty of this Department. It also provides suitable headstones to mark the graves of all soldiers, sailors, or marines who served during the late war, including those who have been buried in private cemeteries and other burial places.

Section 1139, Revised Statutes, makes it the duty of the Quartermaster-General, under the direction of the Secretary of War, to prescribe and enforce a system of accountability for all quartermaster supplies furnished the Army, its officers, seamen, and marines.

CLOTHING AND EQUIPAGE.

During the last fiscal year the sum of $8,665,794.02 was available for use in providing clothing and equipage supplies for the Army and militia. Of this amount $3,695,136.63 was remitted to officers of the Department and requisition for $23,528.42 issued on settlements made by the Treasury on account of claims, leaving a balance on hand June 30, 1902, of $4,947,128.97.

There were issued during the year to the militia of the various States and Territories and of the District of Columbia supplies amounting to $386,889.07. There were also sold to the militia during the fiscal year, under the act approved February 24, 1897, clothing and equipage supplies to the amount of $4,122.08.

Under the act of Congress approved May 26, 1900, which provides for the replacement of such quartermaster supplies as were furnished by the States and brought into the service of the United States by volunteer troops during the war with Spain, claims for clothing and other quartermaster stores in kind to the value of $75,066.32 were allowed by this Department during the past fiscal year. This, added to the former issues ($293,417.33), will make the total value of the property transferred up to June 30, 1902, under the act quoted, $368,483.65.

The collections by the pay department from the enlisted men of the Army from April 1, 1901, to March 31, 1902, on account of clothing drawn by them in excess of their allowance, amounted to $237,536.20, all of which was placed to the credit of the appropriation for clothing and equipage. There was paid by the same department to the enlisted men during the same period, at time of their discharge from the service of the United States, on account of clothing undrawn (savings), the sum of $1,241,290.51.

From the foregoing it appears that the savings are considerable, showing present allowances to be ample.

Articles of clothing and equipage to the amount of $25,760 were sold to the division of insular affairs of the War Department, under special authority of the Secretary of War, for the use of the Philippine constabulary.

MARTINIQUE RELIEF EXPEDITION.

Congress, by act approved May 13, 1902, made an appropriation of $200,000 for the procurement and distribution of such provisions, clothing, etc., as the President might deem advisable for the purpose of relieving the people of Martinique and other islands in the West Indies from the distress which followed the volcanic eruptions there. By 9.20 p. m. May 14, 1902, this Department had placed on board the steamer *Dixie* at New York, which had been designated for the relief

expedition, supplies to the value of $22,340.62, purchased and issued from its depots. An officer of the Quartermaster's Department accompanied this relief expedition. In addition to the supplies forwarded on the *Dixie*, clothing and equipage to the value of $20,758.58 were shipped in charge of an officer of the Quartermaster's Department from San Juan, P. R., on a naval ship dispatched from that point.

INSPECTION OF SUPPLIES.

Every care is taken to secure supplies fully up to the requirements of the established standards and specifications, and it is believed that the present inspection system of the Department is such as to obtain the best results.

EXPERIMENTS TO OBTAIN FAST COLORS FOR WOOLEN MATERIALS.

Studying the conditions connected with modern warfare, as demonstrated in the campaigns in Cuba, the Philippines, and China, this office has for some time been engaged in experiments in dyeing to ascertain the color that would be the least visible. Meeting at first with numerous disappointments, the efforts were finally rewarded with success by producing an olive-drab color, which for invisibility, fastness, and serviceability is believed to be well adapted to the requirements of the service.

The Department was thus enabled to submit to the board of officers appointed by paragraph 14, Special Orders, No. 52, War Department, March 3, 1902, to consider the uniforms and equipments of the Army, perfected samples of materials of various shades of color which resulted in the adoption of the olive-drab mixed shade for the future overcoats and service winter uniforms.

KHAKI WOOL SHIRTS.

In the last annual report of this office reference was made to experiments being then made with khaki dye for woolen fabrics for shirts. Reports received at this office upon the trial of 500 khaki woolen shirts sent to the Philippine Islands for trial show conclusively that they possess all the good qualities of the D. B. flannel shirts and in addition are less visible to the enemy. It was therefore decided to place a supply of these shirts at Manila at the earliest practicable date and steps were taken to provide sufficient flannel for 30,000 shirts and manufacture them by contract as rapidly as possible.

SHOES.

After thorough consultation with large manufacturers of shoes, who are in no manner connected with furnishing such articles for the Army, shoes of an improved pattern have been developed for army use which it is thought will give greater comfort than those heretofore issued by this Department. Five hundred pairs were manufactured and tried in actual service. The result of this trial was so favorable that it was decided to adopt these shoes as standards for the Army. Standard samples and specifications conforming thereto were prepared and distributed to the general depots of the Department.

WATERPROOFING OF WOOLEN GOODS.

Various suggestions for waterproofing the woolen materials entering into the manufacture of army clothing have been received, and this office has for some time been engaged in experiments in such line. No satisfactory results have thus far been reached.

BERLIN GLOVES OF DOMESTIC PRODUCTION.

The Berlin gloves issued to the Army at present are of foreign production. A very thorough practical test of gloves of American manufacture was made during the past year. The test demonstrated that they were not as serviceable, and consequently not as desirable, as those now furnished the Army, and the Department will be compelled to continue the purchase of foreign-made Berlin gloves until something of American make equal to our present standards shall be brought to its attention.

SHELTER TENTS AND SHELTER-TENT POLES.

The shelter tents have been improved so that hereafter they will cover 8 feet of ground space instead of 6 feet 10 inches, as heretofore. Owing to many complaints regarding the shelter-tent poles furnished, an officer of this office devised a pole which will be issued in the future, and, it is believed, will satisfactorily meet all requirements.

TELESCOPE PACKING CASES.

A telescope case of substantial waterproof material, 18 inches long, 15 inches wide, and 9 inches deep, is now furnished enlisted men en route for duty in the Philippines, it having been found that trunks and boxes were not suited to such service.

CAVALRY AND ARTILLERY HORSES AND MEANS OF TRANSPORTATION.

The following statement shows the number and cost of public animals, wagons, and harness purchased by this Department from July 1, 1901, to June 30, 1902:

	Number.	Total cost.	Average cost, each.
Cavalry horses	1,746	$219,241.25	$125.57
Artillery horses	1,762	249,745.76	141.17
Riding horses	1	85.00	85.00
Draft horses	50	9,012.98	180.26
Draft mules	84	12,029.00	143.20
Pack mules	15	1,200.00	80.00
Spring wagons, Dougherty	25	5,334.65	213.38
Wagonette, or other kinds	29	8,814.85	303.96
Trucks, 2 and 4 horse	3	874.00	291.33
Dump carts	102	5,025.50	49.27
Dump carts, sanitary	35	6,752.00	192.91
Carts, spring hammock	1	36.00	36.00
Express wagons	1	189.00	189.00
Water wagons	5	1,520.00	204.00
Spring wagons, delivery	107	12,676.85	118.48
Miscellaneous wagons	26	4,170.75	160.41
Sleighs	47	771.00	16.40
Single sets harness	2,219	51,485.77	23.20
Harness, cart	158	4,657.00	39.47
Aparejos and parts	309	13,139.89	42.52
Total		606,761.25	

The total cost of army ranges, ovens, typewriters, and office safes amounted to $86,323.20.

During the fiscal year forage was purchased and shipped to the Philippines, Cuba, and Porto Rico as follows:

	Pounds.
Hay	69,367,419
Oats	74,527,832
Bran	511,400
Corn	22,820

In the same period 50,435,352 pounds of various kinds of native forage were purchased in the Philippines, at cost of $252,176.76.

SALE OF SURPLUS AND CONDEMNED ANIMALS.

During the past fiscal year, in the United States, Porto Rico, and Cuba, there were condemned and sold 1,930 cavalry horses for $101,718.79, average price $52.70 each; 103 artillery horses for $4,236.66, average price $41.13 each; 144 draft horses for $10,154.83, average price $70.52 each. There were also sold 123 surplus horses for $8,696.63, average price $70.70 each. Six hundred and fifty-one mules were condemned and sold for $51,889.49, average price $79.71 each; also 352 surplus mules for $30,634.62, average price $87.03 each.

In addition to the foregoing, the following surplus and condemned animals were sold in the Philippines: Six hundred and twenty-three cavalry horses, 83 draft horses, and 213 mules, but reports showing amounts received for these animals have not yet been received at this office.

During the year there were 2,584 horses and 1,865 mules lost, died, stolen, etc. Of these, 1,988 horses and 1,705 mules were destroyed or died of disease in the Philippines, the most common complaints being glanders and surra. The latter is reported to be an infectious disease due to the introduction into the system of a parasite that propagates very rapidly in the system of different animals, and that the period of incubation varies according to the condition of the animals and also the number of parasites which first gain access into the economy. The disease runs a course of from ten days to two months, varying with the acuteness of the attack.

There remained on hand at the close of the fiscal year, 20,683 horses and 7,798 mules.

TRANSPORTATION.

During the last fiscal year transportation was furnished, exclusive of the army transport service, for 1,012,259 persons, 12,014 animals, and 274,750 tons of material.

There were transported over bond-aided railroads 23,635 persons, 1,021 animals, and 43,787,162 pounds of freight.

The cost of maintaining the 48 vessels owned by this Department, exclusive of transports and boats in service in the Philippines amounted to $253,012.72.

ARMY-TRANSPORT SERVICE.

On June 30, 1901, the Army Transport service between the United States and Cuba and Porto Rico was discontinued, and on July 1, 1901, all of the army transports which had been employed transporting

troops and supplies between the United States and the West Indies, were placed in New York Harbor and put out of commission, with a view to their future disposition, with the exception of the army transport *McPherson*, which had been wrecked on the coast of Cuba in February, 1901, and which had been raised and temporarily repaired, and was then en route from Matanzas to New York.

Five of these transports had been employed continuously during the preceding fiscal year in this service, viz, *Crook*, *McClellan*, *McPherson*, *Rawlins*, and *Sedgwick*. In addition to these, the smaller transport, *Ingalls*, used as an inter-island boat in the West Indies, was also in New York Harbor being fitted up for service as an inter-island transport in the Philippines.

In view of the needs of the service on the Pacific, it was determined to fit up the army transport *Crook* and send her to Manila, and to lay up the army transports *Sedgwick*, *McClellan*, and *Rawlins*.

The army transport *Rawlins* was sold to the Merchants and Miners' Transportation Company, of Baltimore, Md., on July 27, 1901, for $200,000.

A contract was entered into with the Morse Iron Works and Dry Dock Company, of New York, who were the lowest bidders, for refitting and repairing the army transport *Crook*, at a cost of $92,475. She sailed for Manila, via the Suez Canal route, on December 5, 1901, arriving in Manila on February 3, 1902.

August 22, 1901, the transport *Ingalls* was dispatched from New York for Manila via the Suez Canal, and arrived in Manila October 10, 1901, where she has since been employed in inter-island service.

The *McClellan* was fitted up and sailed from New York on July 10, 1901, arriving in Manila on September 9, 1901. This transport returned to New York, leaving Manila October 18, 1901; arrived December 23, 1901; she again sailed for Manila on February 23, 1902, where she arrived on April 21, 1902; and since that date she has been continuously on duty in Philippine waters.

The examination of the army transport *McPherson* on arrival in New York disclosed that she would need extensive and costly repairs, and as there was no further need of the vessel in the transport service she was appraised and offered for sale by public advertisement. No acceptable bid having been received for her, she was withdrawn from sale and subsequently re-advertised and sold at auction in November, 1901, to Mr. L. E. Lunt, the highest bidder, for $11,150.

The small army transport *Terry* under second re-advertisement was sold at auction in August, 1901, to Mr. M. E. Barry, the highest bidder, for $19,600.

Upon the discontinuance of the army transport service between the United States and the West Indies, the separate office of this service, which had been established in New York City, was closed, and the duties pertaining to it transferred to the depot quartermaster there.

June 10, 1902, instructions were given to have the transport *Sedgwick* advertised for sale. Proposals for the purchase of the ship were not opened until after the close of the fiscal year.

At the beginning of the fiscal year, the following-named tugs, steam lighters, and other small vessels were in the army-transport service in Cuba and on the Atlantic coast, viz: the tugs *Ord*, *Reno*, *Reynolds*, *Richardson*, *Gibbons*, *Wetzel;* steam lighters *Baker*, *Williams*, and *Kearney;* steam yachts *Kanawha* and *Viking;* sloops *Esperanza* and *Miguel*, and the flat lighters *Mocha* and *Bartley*.

During the year the tugs *Reno*, *Reynolds*, *Gibbons*, and *Weitzel*, and the steam lighters *Baker* and *Williams* were transferred from the army-transport service to duty at seacoast posts in the United States.

The tug *Richardson* with the two lighters *Mocha* and *Bartley* were advertised and sold to the highest bidder for $12,045 for the three vessels. The sloop *Miguel* was also advertised and sold to the highest bidder for $500.

The steam lighter *Kearney* and steam yacht *Kanawha*, which had been in service as inter-island vessels in Cuba, were withdrawn and ordered to the United States, where they are now in service.

The tug *Ord* and sloop *Esperanza* are still in service in Cuba; the *Esperanza* has been appraised with a view to her sale. The steam yacht *Viking* being no longer required for the transport service was advertised for sale, but bids for her purchase were not opened until after the close of the fiscal year.

The army transport *Buford*, which had been refitted in the previous year and sent to Manila, after making two voyages to San Francisco and return to Manila, was returned to New York via the Suez Canal route, carrying 23 officers and 901 enlisted men of the Twenty-third United States Infantry and a number of other passengers. This transport returned to Manila from New York in January, 1902, and has since been continuously on the line between San Francisco and Manila.

At the beginning of the fiscal year the following-named army transports were in service on the Pacific, viz: Troopships *Buford*, *Grant*, *Hancock*, *Kilpatrick*, *Logan*, *Meade*, *Rosecrans*, *Sherman*, *Sheridan*, *Sumner*, *Wright*, *Thomas*, *Warren*, and *Liscum;* cable ship *Burnside;* freight ships *Dix* and *Egbert*, and hospital ship *Relief*. During the fiscal year there were added, as hereinbefore stated, the transports *Crook*, *Ingalls*, and *McClellan*.

During the fiscal year there was maintained a regular line of transports sailing semi-monthly between San Francisco and Manila, the regular sailing dates from San Francisco being the 1st and 16th of each month.

The transport *Dix* has also been continuously employed transporting supplies from the Pacific coast to the Philippines.

The troopships being amply provided with accommodations for the care of invalid soldiers, the Medical Department reported that the hospital ship *Relief* was not required for the special service of that Department, and was accordingly transferred to the Quartermaster's Department early in the fiscal year for service as a troop and supply ship, and was retained in service as an inter-island transport.

Six chartered ships were in service on July 1, 1901, 4 of which were discharged during that month and the remaining 3 in August following. No additional ships were in service under charter during the fiscal year.

In view of the reduction of the number of troops serving in the Philippines, steps were taken toward the close of the fiscal year to reduce the number of army transports running between San Francisco and Manila. The following-named vessels were designated to be retained for such service: Troopships *Grant*, *Sherman*, *Sheridan*, *Logan*, *Thomas*, *Kilpatrick*, *Crook*, and *Buford;* freight ships *Dix* and *Warren;* the transports *Burnside*, *Ingalls*, *Liscum*, and *Wright* to be retained in the inter-island service.

It was decided to put the remaining transports out of commission in San Francisco and New York as soon as they could be spared, with a

view to their final disposition in the best interests of the Government. Of the transports to be put out of commission the *Meade*, *Egbert*, *McClellan*, and *Sumner* were, when purchased, under foreign registry. The *Hancock*, *Rosecrans*, *Relief*, and *Lawton* were under American registry when purchased.

It was found upon the return of the *Grant* from her last trip that very extensive and expensive repairs were necessary to place her in fit condition for service on the line to Manila, and therefore she was also put out of commission and the army transport *Hancock* temporarily assigned in her stead.

Sealed proposals were invited by advertisement in the large cities of the East and of the Pacific coast for the sale of the transports *Grant*, *Rosecrans*, and *Egbert*. The offers received in response to these advertisements being considered far below the value of the vessels, they were rejected and these ships still remained in the hands of the Department at the close of the fiscal year.

On June 30, 1902, the transports *Meade*, *McClellan*, and *Sumner* were still in active service.

REPAIRS TO TRANSPORTS.

The repairs on the transport *Sherman*, which were under way at the close of the last fiscal year, were delayed on account of a strike, and were not completed until the spring of 1902, and she was dispatched for Manila April 16, 1902.

During the summer of 1901 the army transport *Seward* was on duty in Alaska, returning to Portland, Oreg., on October 28, 1901, where she remained during the winter. There being no further need for her services in Alaska, the transport was fitted up at Seattle as a refrigerating ship, at a cost of $52,921, for service distributing fresh meats and vegetables among the Philippine Islands.

Quite extensive repairs were authorized by the Department during the fiscal year upon four transports which have for some time been continuously in service in the Philippines, viz: *Sumner*, $47,710; *Relief*, $36,418; *Lisetm*, $92,000; *Wright*, $42,650. These expenditures were authorized after full report to the Department showing the absolute necessity for them in order to keep the vessels in safe and suitable condition for the transportation of troops and supplies around the islands.

No other extensive alterations and repairs were made to any of the army transports. Each of the transports, however, after making the long voyage from San Francisco to Manila and return, usually required on their arrival in San Francisco some repairs to their machinery and hull. The total expenditure on the Pacific coast for refitting and repairs on the transports during the year, as reported, was $605,231.47.

ALASKAN SERVICE.

The transport *Egbert* sailed from Seattle on July 31, 1901, with 3 officers, 129 enlisted men of the Seventh Infantry, 9 men of the Hospital Corps, 1 subsistence department, 4 civilians, and a full load of supplies.

The *Rosecrans* sailed from the same port for Alaska on August 15, 1901, with 3 officers, 156 enlisted men, 5 civilians, and a cargo of supplies.

The transport *Seward*, which had sailed from Seattle for Alaska on June 11, 1901, became disabled en route and was returned to Seattle in tow of the transport *Warren*. After repairs were made to the ship she again returned to Alaska, leaving Seattle on August 23, 1901.

On September 30, 1901, the Department of Alaska was discontinued and the Major-General commanding and staff returned to the United States on the *Seward*, arriving in Portland, Oreg., October 28, 1901.

ARMY TRANSPORT SERVICE IN THE PHILIPPINES.

During the year there were 7 owned transports on duty in the Philippines transporting troops, animals, and supplies to inter-island ports, 4 steam lighters, 3 cascos, 54 bancos, 52 lighters, 6 lorchas, 2 paras, 2 punts, 1 viray, 1 lancan, 9 sailboats, 3 scows, 75 rowboats, and 3 coal hulks; a total of 222 vessels of various classes.

The expenditures on account of the army transport service during the fiscal year ended June 30, 1902, were very largely reduced from those of the previous fiscal year.

The chief quartermaster at Manila reports that one of the most expensive items in the conduct of the army transport service in the Philippines is lighterage, due to the lack of wharves at ports at which troops and supplies must be landed. The insular government has, however, commenced the construction of wharves at various ports, which when completed will still further materially reduce the cost for inter-island transportation.

The following table shows the movement of passengers between the United States and the Philippines, Honolulu, and Alaska during the fiscal year:

From the United States to Philippine Islands	15,853
From the United States to Honolulu	73
From Honolulu to the Philippines	74
From the Philippines to the United States	33,080
From the United States to Alaska	310
From Alaska to the United States	167
Total	49,557

There were also brought from the Philippine Islands to the United States for reinterment the remains of 1,096 officers, enlisted men, and civilian employees.

The shipment of freight and miscellaneous stores between the United States, the Philippines, Honolulu, and Alaska during the fiscal year was as follows:

	Tons.
From the United States to the Philippine Islands	83,613
From the United States to Honolulu	427
From Honolulu to the Philippines	28
From the United States to Alaska	2,750
From the Philippines to the United States	10,298
Total	97,116

In addition to the above, there were transported from the United States to the Philippines 860,863 pounds of mail matter, and $2,478,000 in money, and from the Philippine Islands to the United States, 145,474 pounds of mail matter.

There were only 5 horses transported from the United States to the Philippines during the year.

The total movement during the fiscal year between inter-island ports of the Philippines by owned transports was 70,169 passengers, 2,109 animals, and 147,972 tons of freight, and by commercial vessels 6,697 passengers and 31,249 tons of freight.

From May 25, 1898, to June 30, 1902, there had been transported on owned and chartered transports a total of 595,387 persons.

The following is a list of the owned vessels in the army transport service at the close of the fiscal year, showing their class, tonnage, capacity for passengers and cargo, and where employed on June 30, 1902:

Name.	Class.	Tonnage.	Capacity.			Where employed.
			Officers.	Men.	Cargo with troops.	
					Tons.	
Buford	Troop ship	5,039	68	984	2,764	Pacific fleet.
Burnside	Cable ship	2,194	31	178	1,006	In Philippines.
Crook	Troop ship	4,126	91	870	2,867	Pacific fleet.
Egbert	Freight ship	2,845	20	.....	3,237	Out of commission in San Francisco.
Dix	do	6,839	12	.....	9,939	Pacific fleet.
Grant	Troop ship	5,590	82	1,827	1,887	Out of commission in San Francisco.
Hancock	do	5,164	67	1,062	2,160	Pacific fleet.
Ingalls	do	1,347	31	182	588	In Philippines.
Kilpatrick	do	5,046	68	984	2,764	Pacific fleet.
Kanawha	Transport	127	6	.....	.....	Washington, D. C.
Lawton	Troop ship	3,497	61	663	1,288	In Philippines.
Liscum	Transport	1,072	9	.....	696	Do.
Logan	Troop ship	5,672	146	1,650	1,766	Pacific fleet.
McClellan	do	3,006	75	180	2,156	In Philippines.
Meade	do	5,641	88	1,176	1,376	Pacific fleet.
Relief	do	3,094	18	288	978	In Philippines.
Rosecrans	do	2,603	20	606	2,086	Out of commission in San Francisco.
Sedgwick	do	4,770	118	890	906	Out of commission in New York.
Seward	Transport	2,100	28	.....	740	Seattle. Being fitted up as refrigerating ship.
Sheridan	Troop ship	5,673	126	1,842	1,744	Pacific fleet.
Sherman	do	5,780	112	1,776	1,810	Do.
Sumner	do	3,458	63	768	811	In Philippines.
Wright	Transport	871	17	100	154	Do.
Thomas	Troop ship	5,796	133	1,648	1,984	Pacific fleet.
Warren	do	4,375	53	1,239	1,000	Do.
Kearney	Steam lighter	185	.....	.....	158	En route from Cuba to Washington, D. C.
Viking	Steam yacht	141	.....	.....	.....	Out of commission in New York.
Slocum	Tug	581	.....	.....	.....	San Francisco Harbor
Ord	do	21	.....	.....	.....	Santiago, Cuba.
Esperanza	Sloop	9.5	.....	.....	.....	Gibara, Cuba.

GENERAL REMARKS REGARDING TRANSPORT SERVICE.

Upon the declaration of war with Spain in April, 1898, the Quartermaster's Department was called upon to provide means of transportation for the army to Cuba. The charter of every available steamship under American registry on the Atlantic and Gulf coasts was considered in connection with this service. These ships were carefully and thoroughly inspected to ascertain their seaworthiness and suitability for transporting troops and supplies on the ocean, and if found suitable were chartered and fitted up for service.

The Navy Department had already secured the largest and most commodious of American vessels for service as auxiliary cruisers, and those left available for transport service were of the smaller coast-line steamships used for the transportation of freight, with limited accom-

modations upon them for cabin passengers. From this class of steamships there were chartered the fleet of transports, about thirty in number, which were hastily fitted up for the transportation of officers, men, horses, and all the necessary supplies and impedimenta required for an army in the field.

To provide quarters upon these vessels for the enlisted men to be transported, it was necessary to build bunks on the main and 'tween decks of the ships, and to render these quarters habitable, ports were required to be cut in the ships, and wind sails provided to force air through these ports while en route.

Upon these hastily fitted up transports, the army of General Shafter was transported to Santiago, and after its successful mission in Cuba was returned to the United States, and subsequently the armies of occupation of that island and Porto Rico were transported from the United States on some of these vessels.

From these movements it was manifest that such ships were illy suited for service as troop transports for the Army. The quarters of the men were crowded, poorly ventilated, and unsanitary, causing more or less suffering among the troops, particularly while in the warm climate of the West Indies.

The success of the naval fleet in the bay of Manila and the call for an army to operate on land in that distant archipelago, rendered necessary the charter of a large fleet of ships on the Pacific coast for the transportation of the army on a voyage of nearly 7,000 miles.

Fortunately, on the Pacific coast there were numerous trans-Pacific steamships of large capacity which were available for use of the Government in this emergency. These vessels were fitted up for the accommodation of men and supplies, and the army of occupation was successfully landed in Manila.

Although these ships were commodious and quarters of the enlisted men upon them not overcrowded, it was not possible to make them ideal troopships for a long voyage in the Tropics, with their loads of human freight.

After mature consideration it was decided to purchase steamships suitable for conversion into army transports. Several large steamships were tendered for sale to the Government by the Atlantic Transport Line, which had a fleet of vessels engaged in the transportation of cattle and dressed meats from the United States to Europe. Seven ships were purchased from that steamship line. The Department also acquired, by purchase, seven other steamships. These purchases were made in the summer of 1898, and the ships were hastily fitted up for the transportation of troops, animals, and supplies, and the chartered transports which had been in service between the United States and the West Indies were discharged.

The owned transports were found to be admirably adapted for the service, but there were still lacking in them such accommodations as would make them ideal troopships for long voyages on the ocean. Plans and specifications were therefore prepared for the conversion of these ships into commodious and comfortable transports, and, as they could be spared from the service, one or more of them at a time, contracts were made with leading shipbuilding companies to overhaul and fit them, in accordance with these specifications. Upon completion of three of these ships, viz, *Grant*, *Sherman*, and *Sheridan*, each of which had been fitted to accommodate over 1,800 enlisted men, the

three ships sailed from New York to Manila in the winter of 1898-99, each carrying one full regiment, a battalion of another regiment, and a large quantity of military stores.

Other transports were subsequently fitted up in similar manner, every possible care being taken to make them in every sense the most complete and perfect vessels for the safe and comfortable transportation of men.

The quarters for the enlisted men were provided with metal berths, insuring cleanliness, and are amply ventilated and lighted by electricity; large refrigerating plants were installed upon the ships for the preservation of fresh meats and vegetables for the entire voyage, and ample galleys provided for the preparation of food in the most approved manner. Hospitals were also fitted up for the care and treatment of the sick, with isolation wards for the perfect isolation and treatment of any contagious disease which may develop upon the voyage.

The representatives of a number of other nations have asked for and have been furnished with copies of the plans and specifications under which our transports have been fitted up.

Nearly every ship sailing from Manila had on board about one hundred sick, who were provided with every attention and comfort in the transport hospitals that would be found in any well-regulated hospital ashore.

During the uprising in China in 1900, the United States was enabled by the possession of a well organized transport fleet to place its army and supplies in China promptly and in excellent conditon.

Of the many thousands of persons who have been transported on the vessels of the army transport service since its inception, not one life has been sacrificed by reason of any fault in the fittings or accommodations upon the army transports.

In view of this excellent record, and of the experience of the Department in its futile efforts to secure suitable commercial ships for the transportation of the armies during the war with Spain, and the further fact that when withdrawn from active service the transports can not be advantageously disposed of by sale, I am firmly convinced that, even though circumstances should permit the withdrawal of the transports from regular line service to the Philippine Islands, it would be wise policy to retain a sufficient number of transports as a part of the equipment of the Army, to be economically cared for and kept in such condition as to be promptly available for any emergency which may arise requiring the transportation of troops on the ocean.

The army transport service at San Francisco was under the charge of Maj. O. F. Long to March 31, 1902, and of Maj. C. A. Devol from that time to the close of the fiscal year, and at Manila the service was in charge of Maj. J. B. Aleshire, under the direction of the chief quartermaster. These officers discharged their responsible duties in a zealous and efficient manner. The duties of the transport quartermasters were also creditably performed.

* * * * * * *

DEPARTMENT OF CUBA.

On May 20, 1902, the Department of Cuba was discontinued, and all the troops in the island were withdrawn except eight companies of

artillery. Means of transportation and sufficient supplies for the use of these companies for a limited time were left, and such surplus as could be utilized and was worth the cost of transportation was brought to the United States. The remainder was disposed of by sale, under the general direction of the department commander, and fair prices were realized, especially for animals.

To Capt. C. B. Baker, chief quartermaster, and the other officers of the Quartermaster's Department in Cuba much credit is due for efficient and intelligent performance of duty in connection with the withdrawal of troops and the disposal of the property on hand when the Department of Cuba was discontinued.

PORTO RICO.

The affairs of the Quartermaster's Department in Porto Rico have been well conducted during the fiscal year and the troops properly supplied.

There was some construction and considerable repair work done in the island, and more is called for.

As stated elsewhere in this report, the depot at San Juan was utilized last May for the shipment of supplies for the relief of the people of Martinique and other islands of the West Indies.

HAWAII.

Owing to the decrease in the number of troops sent to the Philippines on transports via Honolulu during the past year and the fact that no public animals were shipped, thus eliminating the necessity for the maintenance of the resting corral at that place, the business of the Honolulu depot has been proportionately decreased, resulting in a large saving in the expenses of the department here in the way of supplies, civilian employees, etc.

In the act making appropriations for sundry civil expenses of the Government, approved June 28, 1902, the Secretary of War is authorized "To acquire leases in such lands in Hawaii as have been set aside for purposes of a military post." The matter was under consideration at the close of the fiscal year.

NAGASAKI, JAPAN.

The depot office at Nagasaki, Japan, is still maintained, and transports from Manila to San Francisco stop there to take on coal for the home trip. When absolutely necessary, transports have had repair work done at Nagasaki, and, through that office, at other points in Japan.

PHILIPPINE ISLANDS.

The annual report of Col. C. F. Humphrey, chief quartermaster, Division of the Philippines, shows that a great reduction in the expenses of the quartermaster's department in the Philippine Islands was effected during the fiscal year ended June 30, 1902.

CLOTHING AND EQUIPAGE.

The chief quartermaster reports that the clothing and equipage supplied by this Department for issue to troops in the Philippine Islands

has been ample in quantity and of excellent quality; that great demand exists for the chambray and khaki woolen shirts; that the light-weight woolen stockings are considered better adapted to the climate in the Philippines than cotton stockings; that the light-weight woolen blankets are very popular; that the campaign hats furnished have been found generally satisfactory, and that slickers are considered preferable to ponchos.

Many of the enlisted native scouts, being much smaller in stature than the American soldier, can not be fitted from the usual sizes furnished the Army, and clothing made especially for them is required.

BARRACKS AND QUARTERS.

During the fiscal year there were rented in the Philippine Islands 876 buildings for shelter of officers, troops, and stores; in addition, there were 59 convents, 20 insular government buildings, and 93 buildings belonging to the United States set aside for use of the Army, under provisions of the treaty of Paris, occupied as barracks, quarters, and storehouses, for which no rent was paid.

The building operations during the year were extensive, especially in Manila, where 16 storehouses are under construction, to be completed by September 30, 1902. These structures are on land adjoining the new harbor of Manila, loaned for that purpose by the insular government. They will be of frame with galvanized iron roofs, the lumber being Oregon and Washington fir. The sides will be open, surrounded with a fence, subjecting all parts to observation and supervision at all times. The chief quartermaster remarks that the concentration of supplies at this one point will enable the force of checkers, storekeepers, and laborers to be handled to better advantage than when scattered throughout the city, as heretofore, and no doubt will result in considerable reduction in the number of men required to be employed. When these 16 new storehouses are completed the rented storehouses in the city of Manila for the use of the Quartermaster's and Subsistence departments will be given up.

Congress having made provision for the construction of a military post for the accommodation of a garrison of two full regiments of infantry, two squadrons of cavalry, and two batteries of artillery in the vicinity of Manila, a site consisting of over 2,100 acres of gently rolling country was purchased. This property is situated about one hour's drive from the city, at the confluence of three rivers—the Pasig, Pateros, and Taguig—and is accessible, besides water routes, by two roads from Manila, one through Santa Ana and the other via Pasay. There is deep water at the landing, and a wharf has been constructed to facilitate building operations, and the handling of supplies after the post is completed and occupied. Plans for the troop barracks have been adopted, and the material is being purchased in the United States. The grounds are being graded, brush cut away, and the roads widened, preparatory to the commencement of active building operations.

The only other construction at Manila was the building of a power house for the signal corps at Quartel Infanteria. Considerable repair work was undertaken, almost every army building in Manila requiring minor repairs. The material for the most of this work was purchased in the United States. Construction of frame and Nipa barracks for troops in the Cagayan Valley, northern Luzon, has been commenced.

WATER SUPPLY.

Water is obtained in Manila from the city waterworks, and is distilled before issued to troops. The water supply of the new post of Manila will be procured from wells to be bored, the water to be then distilled.

At most of the stations outside of the city of Manila, it is necessary to depend on wells, streams, and rain water caught from roofs in large tanks and cisterns, for the water supply. Where it is necessary to bring water from a distance the troops have sometimes built bamboo pipe lines, saving the expense of hauling. Condensing plants are supplied at such stations as are recommended by the chief medical officer to be so equipped, and where the garrison is sufficiently large and the water so bad as to justify the expense. There are 6 of these plants at Manila, 2 each at Batangas and the new post of Manila, and 1 each at Aparri, Iligan, Cebu, Lucena, Iloilo, Vigan, Zamboanga, Binan, Cottobato, Malabon, Davao, Masbate, Pasay, and Puerta Princessa. At other stations the sterilizers, of which mention has been made elsewhere in this report, are furnished.

Col. Charles F. Humphrey, assistant quartermaster-general, was the chief quartermaster of the Division of the Philippines during the fiscal year. His administration of the affairs of the Quartermaster's Department was both efficient and able.

Acknowledgment is also due the other officers of the Quartermaster's Department on duty in that distant archipelago for laborious services well performed.

TOUR OF INSPECTION BY THE QUARTERMASTER-GENERAL.

Under orders from the Secretary of War I started, in the early part of the fiscal year, on a trip of inspection which extended via San Francisco to the Philippine Islands.

Careful inquiry was made into the affairs of the Quartermaster's Department at Manila, at which point is centered the administrative charge of the vast business of the Department throughout the archipelago, including the inter-island transport service.

Every facility was extended to me by the division commander and chief quartermaster to aid me in my duties, and, based upon full consultation with them and personal insight into matters pertaining to the Department, steps to be taken looking to the betterment of conditions and reduction in expense where practicable were decided upon.

One of the important conclusions reached was that of concentrating supplies of the Quartermaster's and Subsistence Departments in warehouses to be built on land adjoining the new harbor of Manila, as hereinbefore alluded to. At the close of the fiscal year this work was well under way.

Other points were also visited by me in Luzon, Samar, Panay, Cebu, Mindanao, and Jolo, at all of which the business of the Quartermaster's Department was carefully investigated.

The result of this tour of inspection was made the subject of a special report to the Secretary of War.

PERSONNEL.

The following officers are provided by law for the Quartermaster's Department:

Quartermaster-General, with rank of brigadier-general	1
Assistant quartermasters-general, with rank of colonel	6
Deputy quartermasters-general, with rank of lieutenant-colonel	9
Quartermasters, with rank of major	20
Quartermasters, with rank of captain	60
Total	96

During the fiscal year Col. James M. Moore, assistant quartermaster-general, Maj. Francis B. Jones, and Capt. Jonathan N. Patton, quartermasters, retired from active service; Capt. Nathan P. Batchelder, quartermaster, resigned, and Lieut. Col. Charles Bird, deputy quartermaster-general, was promoted to the rank of brigadier-general, U. S. Army, on May 5, 1902. This office had the benefit of the valuable services of the latter officer up to the time of his retirement, June 17, 1902.

OFFICERS DETAILED FOR DUTY IN THE QUARTERMASTER'S DEPARTMENT.

During the fiscal year, under authority contained in section 36, act of Congress approved February 2, 1901, 6 vacancies in the department were filled by detail of line officers of the Army. There were 9 detailed officers on duty in this department at the close of the fiscal year

POST QUARTERMASTER-SERGEANTS.

Of the 150 post quartermaster-sergeants authorized by law, 146 were in service at the close of the fiscal year. The number of such sergeants now authorized is found inadequate to supply the requirements at posts and stations in the United States, Alaska, Hawaii, Porto Rico, and the Philippine Islands, and it is recommended that Congress be asked to authorize the appointment of at least 25 more post quartermaster-sergeants.

Under the regulations applicants for appointment as post quartermaster-sergeants must have had four years' service in the Army, have reached the grade of sergeant, and are subject to examination before appointment, thereby insuring competent and trustworthy men for the important duties they are called upon to perform. Moreover, by their employment the cost of civilian clerical help is reduced.

DETACHMENT OF ARMY SERVICE MEN, QUARTERMASTER'S DEPARTMENT, WEST POINT, N. Y.

The quartermaster commanding this detachment reports 150 enlisted men in service at the close of the year, all of whom performed their work satisfactorily.

CIVILIAN EMPLOYEES, QUARTERMASTER'S DEPARTMENT AT LARGE.

The number of employees has been adjusted to the lowest limit consistent with the best interests of the service.

CIVILIAN EMPLOYEES, QUARTERMASTER-GENERAL'S OFFICE.

There are 220 clerks and other employees authorized for this office. The temporary emergency force was brought into the classified service under authority of Congress, approved April 28, 1902.

I take pleasure in acknowledging the faithful and efficient services of the clerical force in this office, to whom credit is due for successful efforts to prevent the great volume of work from falling in arrears.

CONCLUSION.

In concluding this report I desire to express my full appreciation of the zealous and helpful cooperation extended to me by all the officers of the corps in the administration of the affairs of the department.

The officers associated with me in this office during all or part of the fiscal year were Lieutenant-Colonels Bird and Patten; Majors Ruhlen, Martin, Long, Hodgson, and French; Captains Carson, Baker, and Dare. I am indebted to them for faithful and efficient assistance in conducting the business of this office.

M. I. LUDINGTON,
Quartermaster-General, U. S. Army.

The SECRETARY OF WAR.

REPORT OF THE COMMISSARY-GENERAL.

WAR DEPARTMENT,
OFFICE COMMISSARY-GENERAL,
Washington, D. C., October 11, 1902.

SIR: I have the honor to submit the following report of the operations of the Subsistence Department for the fiscal year ending June 30, 1902:

RESOURCES, EXPENDITURES, AND BALANCES.

The following statement exhibits the aggregate fiscal resources and expenditures of the department and the balances at the close of the fiscal year 1902:

RESOURCES.

	Relief of citizens of the French West Indies, act approved May 13, 1902.	Subsistence of the Army. Certified claims.	Subsistence of the Army, Jan. 1, 1899.	Subsistence of the Army, 1899.	Subsistence of the Army, 1900.	Subsistence of the Army, 1901.	Subsistence of the Army, 1902.
Amounts in the Treasury to the credit of the appropriations of the Subsistence Department, June 30, 1901					$854,938.86	$2,428,545.67	
Amounts which were reported in the last annual report (as also in supplemental financial statement of Jan. 6, 1902) as being to the credit of officers of the Subsistence Department and of officers doing duty in the Subsistence Department with the Treasurer, assistant treasurers, designated depositaries, and fiscal agents of the Government, and in their personal possession on June 30, 1901				$3,534.15	55,084.26	1,153,003.18	
Amounts refunded to the Treasury near close of fiscal year 1901, since carried to the credit of the appropriations			$18.61		139.86	12.73	
Amounts appropriated for the subsistence of the Army for the fiscal year ending June 30, 1902:							
Act, Mar. 2, 1901							$13,022,750.00
Deficiency act, Feb. 14, 1902		$7,805.59					
Amount of war appropriation warrant No. 13 (in part)	$75,000.00						
Amounts collected from various sources and refunded to the appropriations of the Subsistence Department on the books of the Treasury during the fiscal year 1902			154.61	9,672.73	11,571.11	101,049.58	42,977.18
Amounts charged against officers on account of funds alleged to have been lost by theft, etc., for which relief can only be obtained in the Court of Claims, under sections 1059 and 1062, Revised Statutes, or from Congress, as follows:							
Officers still in service				178.88	111.93		
Officers out of service						1,235.59	
Amounts received by officers of the Subsistence Department and by officers doing duty in the Subsistence Department from sales of subsistence stores during the fiscal year 1902 and taken up for immediate disbursement					2,069.76	8,027.46	3,184,640.12
Amounts taken up by officers doing duty in the Subsistence Department on account of refundments and reclamations for stores lost, damaged, etc., in correction of errors in their accounts, etc., during above period				44.40	1,171.76	14,084.30	68,037.98
Amount taken up by officers as gains				540.00			6,841.42
Amounts taken up by officers unexplained				3,280.90	414.47	8,632.76	31,798.17
Total resources	75,000.00	7,805.59	173.22	17,251.06	925,502.01	3,714,591.27	16,357,044.87

EXPENDITURES.

Amounts expended, on the books of the Treasury, from the appropriations of the Subsistence Department during the fiscal year 1902		$7,805.59	$173.75		$7,558.01	$329,971.00	$397,116.03
Amounts disbursed by officers of the Subsistence Department and officers doing duty in the Subsistence Department during the fiscal year 1902	$70,583.56			$379.82	1,715.73	275,192.33	9,149,451.97
Amounts dropped by officers doing duty in the Subsistence Department, in correction of errors in their accounts during the fiscal year 1902						340.35	618.71
Amounts carried to the surplus fund on June 30, 1902 (act June 20, 1874)			199.47	12,261.58	895,288.60		
Error in Treasury in covering into appropriation 1902, should have been in special appropriation, Relief of citizens of the French West Indies							4,416.44
Amounts of balances unaccounted for by officers whose accounts are in process of settlement				4,630.78			
Amounts charged against officers on account of funds alleged to have been stolen, etc., now dropped from this financial statement				178.88	111.93		
Total expenditures	70,583.56	7,805.59	173.22	17,251.06	904,674.27	605,503.68	9,551,603.15

BALANCES.

Amounts in the Treasury to the credit of the appropriation of the Subsistence Department June 30, 1902						$2,999,274.57	$5,985,664.17
Amounts to the credit of officers of the Subsistence Department and of officers doing duty in the Subsistence Department with the Treasurer, assistant treasurers, designated depositaries, and fiscal agents of the Government, and in their personal possession, per the latest accounts received to June 30, 1902					$20,827.74	107,657.43	816,354.72
Amounts refunded to the Treasury near close of fiscal year 1902, but not carried to the credit of the appropriations by June 30, 1902	$4,416.44						2,463.79
Amounts charged against officers on account of funds alleged to have been lost by theft, etc., for which relief can only be obtained in the Court of Claims, under sections 1059 and 1062, Revised Statutes, or from Congress, as follows:							
Officers still in service						920.00	959.04
Officers out of service						1,235.59	
Total balances	4,416.44				20,827.74	3,109,087.59	6,805,441.72

In the expenditures above reported for the fiscal year 1902, the following items of disbursement are included: Commutation of rations to enlisted men on furlough, $44,621.11; to ordnance sergeants of posts not garrisoned, $3,249.20; to enlisted men on duty where rations could not be issued conveniently, $102,776.88; to enlisted men while traveling, $18,719.40; commutation of fresh vegetables, $5,895.55; special diet for enlisted men in Army and Navy General Hospital, Hot Springs, Ark., $8,220.80; meals for recruiting parties and recruits and troops moving, $227,284.98; liquid coffee for troops traveling, $26,902.15; salaries of civil employees of Subsistence Department at posts and stations, including wages of laborers and mechanics, fees of inspectors, and miscellaneous small employments, $366,749.72; wages paid civil employees of Subsistence Department on transports, $304,092.59; board wages of civil employees of transports while ashore, $21,667.80; extra duty pay, $19,769.21; advertising and commercial newspapers, $4,491.34; printing, $2,125.33; rent of telephones, $1,595.81; ice for issue to troops and for refrigerating purposes (45,596,645 pounds), $233,569.07.

The following items of disbursement were made in the fiscal year 1901, but could not be included in the report for that year by reason of the delay in receiving the accounts at this office: Commutation of rations to enlisted men on furlough, $3,875.05; to ordnance sergeants at posts not garrisoned, $121.20; to enlisted men on duty where rations could not be issued conveniently, $7,249.45; to enlisted men while traveling, $230.75; special diet for enlisted men in Army and Navy General Hospital, Hot Springs, Ark., $910.40; meals for recruiting parties and recruits and troops moving, $5,157.83; liquid coffee for troops traveling, $184.29; salaries of civil employees of Subsistence Department at posts and stations, including wages of laborers and mechanics, fees of inspectors, and miscellaneous small employments, $10,947.52; wages paid civil employees of Subsistence Department on transports, $18,774.46; board wages of civil employees of transports while ashore, $1,608.25; extra-duty pay, $73.85; advertising and commercial newspapers, $726.09; printing, $234.57; rent of telephones, $61.10; ice for issue to troops and for refrigerating purposes (1,740,452 pounds), $14,622.28.

HOSPITAL ISSUES.

The supplies purchased and issued from stock on hand during the fiscal year for enlisted men in hospital, too sick to use the army ration, amounted in value to $436,255.28.

Like issues were made in fiscal year 1901, amounting in value to $12,255.63, but not included in said report, owing to the delay in the receipt of the accounts and returns in this office.

Issues of articles, differing from those of the ration, to enlisted men in camp in the United States during periods of recovery from low conditions of health, consequent upon service in unhealthy regions or in debilitating climates, aggregated in value $22,900.86.

Statement of the value of subsistence supplies issued to Filipino convicts, civil scouts, native scouts, destitutes, civil employees (linemen of the Signal Corps), during the fiscal year 1902, and of the amounts reported as collected from public civil funds of the Philippine Islands by Col. C. A. Woodruff, A. C. G., chief commissary, Division of the Philippines.

CONVICTS.

When issued.	Value.	Reported as collected on account of issues.	Amount.
Balance due and uncollected for fiscal year 1901	$10,632.55	August, 1901	$3,943.53
		October, 1901	2,598.64
Delayed statement of issues in fiscal year 1901	3,388.82	February, 1902	70.78
		Uncollected	7,408.42
	14,021.37		14,021.37
Balance due and uncollected for fiscal year 1901	7,408.42		
* * *	*	* *	*
July, 1901	2,413.59	July, 1901	868.90
August, 1901	2,070.35	August, 1901	657.79
September, 1901	1,963.44	September, 1901	576.67
October, 1901	1,801.41	October, 1901	434.61
November, 1901	1,674.66	Uncollected	15,759.29
December, 1901	1,531.10		
January, 1902	1,523.28		
February, 1902	1,403.57		
March, 1902	1,188.97		
April, 1902	1,105.71		
May, 1902	1,254.27		
June, 1902	366.91		
	18,297.26		18,297.26
Balance due and uncollected for fiscal year 1902	15,759.29		

CIVIL SCOUTS.

July, 1901	$395.99	July, 1901	$209.45
August, 1901	405.61	August, 1901	354.75
September, 1901	557.15	September, 1901	337.07
October, 1901	294.46	Uncollected	3,223.29
November, 1901	269.46		
December, 1901	325.39		
January, 1902	308.51		
February, 1902	474.72		
March, 1902	584.12		
April, 1902	703.64		
May, 1902	5.30		
June, 1902	----------		
	4,124.56		4,124.56
Balance due and uncollected for fiscal year 1902	3,223.29		

NATIVE SCOUTS.

Fiscal year 1901.			
Balance due and uncollected as reported to date for issues in fiscal year 1901	$51,002.95	November, 1901	$11,189.17
		February, 1902	1,591.09
		Uncollected	38,222.69
	51,002.95		51,002.95
Balance due and uncollected for fiscal year 1901	38,222.69		
Fiscal year 1902.			
July, 1901	16,382.50	July, 1901	6,203.42
August, 1901	18,386.29	August, 1901	9,395.10
September, 1901	17,814.73	September, 1901	8,175.07
		Uncollected	28,809.93
	52,583.52		52,583.52
Balance due and uncollected for fiscal year 1902	28,809.93		

Statement of the value of subsistence supplies issued to Filipino convicts, etc.—Continued.

DESTITUTES.

When issued.	Value.	Reported as collected on account of issues.	Amount.
Fiscal year 1901.			
Balance due and uncollected for fiscal year 1901	$1,081.15	February, 1902	$51.24
Delayed statement of issues in fiscal year 1901	438.91	Uncollected	1,468.82
	1,520.06		1,520.06
Balance due and uncollected for fiscal year 1901	1,468.82		
Fiscal year 1902.			
July, 1901	919.53	July, 1901	48.81
August, 1901	1,054.27	August, 1901	215.67
September, 1901	558.97	September, 1901	82.87
October, 1901	240.04	October, 1901	18.26
November, 1901	367.03	Uncollected	2,913.83
December, 1901	262.18		
January, 1902	112.75		
February, 1902	149.30		
March, 1902	240.93		
April, 1902	238.64		
May, 1902	123.93		
June, 1902	11.37		
	4,278.94		4,278.94
Balance due and uncollected for fiscal year 1902	3,913.83		

CIVIL EMPLOYEES (LINEMEN OF SIGNAL CORPS).

January, 1902	$73.93	Uncollected	$2,660.83
February, 1902	10.84		
March, 1902	515.77		
April, 1902	766.07		
May, 1902	838.63		
June, 1902	155.59		
	2,660.83		2,660.83
Balance due and uncollected for fiscal year 1902	2,660.83		

Statement of the value of subsistence stores issued to sailors and others and transferred to officers of the United States Navy, and of amounts of same that have been collected.

Issued and transferred.	Value.	Collected.
Issued on transport—		
Hancock	$577.75	$577.75
Kilpatrick	5.40	5.40
Logan	5.94	
McClellan	45.00	45.00
Sheridan	21.25	21.25
Thomas	21.00	
Warren	151.25	68.75
Transferred to Asst. Paymaster P. W. Delano, U. S. Navy, Guam	1,881.92	1,881.92
Transferred to Asst. Paymaster F. G. Pyne, U. S. Navy, Guam	8,923.34	752.75
Uncollected		8,280.03
	11,632.85	11,632.85
Balance due and uncollected for fiscal year 1902	8,280.03	

Claims have been made on the Navy Department for such of the above sums as have not yet been settled.

Statement of the value of subsistence stores issued to marines, and transferred in bulk to officers of the Marine Corps for issue to marines, and of amounts collected on account of same.

Issued and transferred.	Value.	Collected.
Marines at—		
San Juan, P. R	$4,686.47	$3,882.77
Balangiga, P. I	4,092.85	75.55
Bacoor, P. I	6,141.37	2,924.45
Balabac, P. I	143.97	.....
Basey, P. I	7,301.01	225.88
Cavite, P. I	43,114.17	28,697.62
Isabela de Basilan, P. I	4,510.53	2,595.34
Lamang, P. I	106.01	.....
Malabrigo light-house, P. I	8.99	.....
Olongapo, P. I	11,094.86	1,338.36
Parang, P. I	422.92	.....
Pambujan, P. I	156.59	.....
Pollok, P. I	1,508.69	1,438.63
Tacloban, P. I	3.60	.....
Marines on island of Guam	956.34	.....
Marines on transport—		
Hancock	1,069.25	.....
Logan	.70	.....
Sheridan	1,094.75	8.50
Sherman	650.00	.....
Warren	3,179.45	.....
Uncollected	.....	49,055.45
	90,242.55	90,242.55
Balance due and uncollected for fiscal year 1902	49,055.45	.....

Claims have been made on the Navy Department for such of the above claims as are still due.

Issues to Indians.

	Value.
Apache Indians at Fort Sill, Okla	$11,956.68
Chiricahua Indian at Fort Grant, Ariz	62.87
Seminole Negro Indian	62.03
Indians in Alaska	407.56
Visiting Sioux Indians at Fort DuChesne, Utah	2.30

Issues to civil employees.

Civil employees (Quartermaster, Commissary, and Ordnance departments, and the Signal Corps)	324,370.67

Miscellaneous issues.

Military prisoners at posts (general prisoners)	78,633.97
Filipino insurgent prisoners deported to Guam	1,114.89
Filipino insurgent prisoners captured and in arrest	90,467.23
Filipino military convicts	3,270.78
American civil prisoners in the Philippines	54.13
American civil prisoners in Alaska	6.93
Destitute citizens in United States	8.44
Destitute citizens in Alaska	158.17
Sufferers by storm in Louisiana in August, 1901	25.88
The following issues were made in fiscal year, 1901, but not included in said report, the returns of subsistence stores being delayed in arriving in this office:	
Filipino insurgent prisoners deported to Guam	372.22
Filipino insurgent prisoners captured and in arrest	8,607.73

SALES OF SUBSISTENCE STORES.

The amounts received from sales of subsistence stores during the fiscal year are classifiable as follows:

From whom or on what account received.	Subsistence of the Army.		
	1900.	1901.	1902.
For relief of citizens, French West Indies			83,124.59
To officers	$209.37	$567.37	777,260.38
To enlisted men, companies, detachments, and hospitals	1,767.39	5,189.65	1,645,070.30
To civilians	5.00	269.69	276,347.79
At auction			31,275.46
To Quartermaster's Department			2,503.98
To post exchange			78,146.31
To Indians			122.91
To Indian agents and employees			3,226.56
To meals on transports		1,614.35	221,004.15
To naval officers and enlisted men of Navy			13,004.83
To post bakeries			29.88
To natives (Filipino)			128,625.67
To post laundry			241.54
To Department of Agriculture			51.60
To court officials, Alaska			1,113.51
To special sales			108.36
To transport Iroquois			2,555.14
To United States Coast and Geodetic Survey, Pathfinder			70.25
Total	2,069.76	8,027.46	3,184,640.12

The accounts containing reports of amounts received for sales of stores in the fiscal years 1900 and 1901 were not received in this office in time to appear in the annual reports of those years.

SALES ON CREDIT.

Sales on credit to officers of the Army during the fiscal year ended June 30, 1902, as shown by the accounts of that year thus far received, amount to $21,538.22, and the sums thus far reported as collected through the pay department, and otherwise settled, amount to $17,737.20, leaving the sum of $3,801.02 yet to be collected.

The sales on credit to the enlisted men of the Army amount to $65,177.61; the collections by the pay department, on muster and pay rolls and on final statements, on account of credit sales, amount to $52,007.75, leaving still to be collected $13,169.86.

Sales on credit to enlisted men of both the Regular and Volunteer Army during the previous fiscal year, not heretofore reported by reason of delay in receipt of accounts, amount to $886.74, and the collections through the pay department amount to $12,005.32, leaving still to be collected on account of credit sales in that year, $1,179.22.

SALES OF CONDEMNED STORES AND PROPERTY.

From the returns thus far received and examined, the stores condemned and sold in the fiscal year ended June 30, 1902, are shown to have been as follows:

	Subsistence stores condemned and sold.
Original cost of stores condemned	$340,759.23
Realized from sales of such stores (also including property ordered sold)	31,275.46
Loss	309,483.77

No separate statement of the value of subsistence property condemned having been kept, the amount realized for such as was condemned and ordered sold is merged in above sum of $31,275.46.

The value of stores condemned in previous fiscal year, which was not included in the annual report of that year, by reason of delay in receipt of returns showing same, was $26,544.01, and the amount realized through sale of such as was ordered sold was $1,256.58.

POST COMMISSARY SERGEANTS.

The number of post commissary sergeants in the service at the beginning of the year was 187, although 189 was the number stated in my last annual report, which discrepancy is due to the fact that two were discharged, but the information was not received at this office in time to be considered. During the period of this report 31 were appointed, 15 were discharged, 3 retired, and 3 died, leaving 197 in the service at the end of the year.

Number of claims on hand, received and disposed of during the fiscal year ending June 30, 1902.

	Claims for commutation of rations.		
	While held as prisoner of war in rebel States.	While on furlough, and miscellaneous claims.	Total.
These were on hand June 30, 1901	5	4	9
Received during the fiscal year	272	221	493
Total	277	225	502
Disposed of during the year	270	215	485
On hand June 30, 1902	7	10	17

The number of letters, indorsements, and postal cards written during the year in connection with the above claims was 1,225.

Statement of accounts current and returns on hand June 30, 1901, received and examined during fiscal year ending June 30, 1902, and on hand at the close of that fiscal year awaiting examination.

	Accounts current.	Returns of stores.	Returns of property.	Total.
On hand June 30, 1901	790	1,576	261	2,627
Received during fiscal year 1902	6,403	4,948	2,089	13,440
Total	7,193	6,524	2,350	16,067
Examined during year	6,520	5,743	1,941	14,204
On hand June 30, 1902	673	781	409	1,863

The examination of the accounts current required the verification of 116,829 vouchers; the returns of subsistence stores, 84,850; and returns of subsistence property, 5,513 vouchers.

In connection with the examinations, 7,137 postal cards were used, and 7,824 letters and 6,488 indorsements written and recorded, 8,052 papers copied, and 793 days of time on unclassifiable work consumed.

Contracts for subsistence to the number of 467 and for meals for recruiting parties and recruits to the number of 493, total 960, were acted on and disposed of during the year.

Certificates of service as acting commissary were issued to the number of 770, and certificates of nonindebtedness to the number of 1,608.

WITHDRAWAL FROM CUBA.

The closing days of the fiscal year marked the withdrawal of the United States from Cuba and the recall of the military forces of the Government with the exception of small garrisons which were intended to remain and be attached to the Department of the East. While the event of withdrawal was anticipated and largely discounted, still there were vexatious questions and details to be settled, and the Subsistence Department was fortunate in having as chief commissary of the Department of Cuba an officer of the wide experience and sound judgment of Lieut. Col. W. L. Alexander to deal with the situation.

Under the provisions of General Orders, No. 31, A. G. O., 1902, the troops which were to remain in Cuba were to be provided with three months' rations and stores for sales, with the necessary amount of commissary property. All other stores and property not needed or provided for were to be sold at auction after due advertising of not less than ten days in the island.

Lieut. Col. W. L. Alexander, chief commissary of the Department of Cuba, under date of May 16, 1902, in submitting his annual report stated:

> In anticipation of the withdrawal of the troops from the island, supplies have been so shifted about during the year as to place all posts as nearly as possible on an equality as to the stock on hand. By doing this, making the requisition period as short as it could be made with safety, and carefully cutting down all calls for stores to the lowest limit possible, the Department was in good condition for the work to be done when the order came directing the withdrawal of the troops on May 20.
>
> The wisdom of the provisions of G. O. 31, H. Q. A., A. G. O., 1902, directing the sale of stores and property belonging to the Subsistence Department was fully demonstrated by the results. There were supplies on the island that came here in 1898 and 1899, brought when purchases were large, deliveries were required in great haste, and conditions not favorable for the careful inspection usually given by purchasing officers. The continual withdrawal of troops from the island in 1899 and 1900 made it difficult to estimate what would be required. Notwithstanding these conditions, a comparatively small amount of supplies remained to be sold at auction. * * * My experience in closing out the stock in Cuba convinces me that it would be most advantageous to the Government if a similar disposition could be made of subsistence supplies that from legitimate causes accumulate at any army post. It would, of course, have to be done under rigid rules formulated by the Commissary-General, and never without his specific authority.
>
> The posts remaining on the island, and that will hereafter form part of the Military Department of the East, have been supplied—either in kind or by orders for shipment made on purchasing commissary, New York City, to include August 31, 1902—in all except fresh beef and fresh vegetables. These are covered by contracts up to and including June 30, 1902, and after that date the commissaries of the several posts are authorized to purchase these articles monthly in such quantities as may be required. The chief commissary, Department of the East, has been advised of the action taken in the matter.

The total amount realized from the above-mentioned auction sales, which were made at Baracoa, Guantanamo, Hamilton Barracks, Habana, Holguin, Camp Mackenzie and Manzanillo, was $14,526.10, being about 50 per cent of the invoice price, which was an excellent realization when it is considered that the per cent in all cases was mate-

rially reduced by articles that were entirely worthless and that had been on the island since 1898–99. Comparatively nothing was sold that was fresh and from recent purchases, stores of this description being left for the current supply of the artillery that remained on the island.

RELIEF OF CITIZENS OF THE FRENCH WEST INDIES.

On May 8, 1902, an earthquake and volcanic eruption occurred in the island of Martinique, in the French West Indies, and resulted in an appalling loss of life and rendered thousands homeless and destitute, with the direful threat of famine impending.

Upon the prompt recommendation of the President of the United States the Congress appropriated (by act approved May 13, 1902) the sum of $200,000 to procure and distribute among the suffering and destitute people of the French West Indies provisions and necessary articles, and to take such other steps deemed advisable for the purpose of rescuing and succoring the people imperiled and threatened with starvation. Of the total amount appropriated, the sum of $75,000 was allotted to the Subsistence Department to procure food supplies for the sufferers.

The U. S. S. *Dixie* was designated to transport the supplies and Capt. H. J. Gallagher, of the Subsistence Department, was selected to take charge of the supplies aboard and make the distribution of them. Below are the full instructions to Captain Gallagher:

OFFICE OF THE COMMISSARY-GENERAL,
Washington, May 13, 1902.

Capt. H. J. GALLAGHER,
Commissary,
(Care of Purchasing Commissary), New York, N. Y.

CAPTAIN: It is the wish of the Secretary of War that in the performance of the duty to which you have been assigned, viz, the distribution of stores to the afflicted in the French West Indies, you proceed with the ship from place to place and transfer the stores to the local authorities for distribution, you remaining with the ship and returning thereon. Take receipts from local authorities for stores transferred, and expend such moneys as may be necessary in the delivery of the stores.

Very respectfully,

JOHN F. WESTON, *Commissary-General.*

Maj. D. L. Brainard, the purchasing commissary at New York, was charged with the purchase of these supplies. He was directed to procure $70,000 worth of bacon, hard bread, codfish, rice, tea, coffee, sugar, salt, pepper, vinegar, condensed cream, canned chicken soup, etc., and to furnish Captain Gallagher with $5,000 in cash, to be used by him for incidental expenses in delivering these stores to the proper parties at the different ports where the *Dixie* might touch.

Major Brainard proceeded to procure the supplies. The following are the quantities and their value:

Bacon, 65,375 pounds	$7,502.54
Codfish, 171,100 pounds	7,520.94
Flour, 85,000 pounds	1,776.50
Hard bread, 214,433 pounds	9,123.52
Baking powder, 3,024 pounds	555.66
Rice, 995,500 pounds	34,238.61
Coffee, 16,000 pounds	2,125.00
Tea, 4,008 pounds	1,402.80
Sugar, 80,000 pounds	2,992.00
Vinegar, 516 gallons	61.92
Salt, 4,000 pounds	15.20

Pepper, 250 pounds	$57.50
Matches, 14,400 boxes	55.00
Can openers, 1,468	30.68
Ham, 6,164 pounds	644.84
Jelly, currant, 1,440 cans	360.00
Milk, 9,600 cans	724.00
Soup, 4,800 cans	750.00
The total cost of which amounted to	69,936.71

Major Brainard was also designated to take charge of the Citizens' Relief Association contributions for the sufferers in the French West Indies, and Capt. H. G. Cole was ordered to report to him to assist in the performance of the work.

Under date of May 16, in a memorandum to the Secretary of War, I had the honor to state:

At 1 o'clock on the 12th instant I received instructions from the Adjutant-General of the Army to purchase $70,000 worth of stores for the sufferers at Martinique. At 1.30 o'clock Major Brainard, the purchasing commissary at New York, had these instructions by telephone, was buying at 2.30, and the whole shipment of commissary stores, over 900,000 pounds, was aboard the *Dixie* at 8.53 p. m. on the 14th. Captain Gallagher, in charge, took with him $5,000 to defray incidental expenses. There were also put aboard 25,000 pounds medical stores, 115,000 pounds quartermaster stores, 14,950 pounds food stuffs from the New York Journal, and 14,000 same from the New York World. Allowing 1 pound to the ration, the subsistence stores belonging to the Government, at 1 pound per day, will subsist 50,000 people for better than thirty-six days.

Statement.

Total amount of appropriation allotted to the Subsistence Department		$75,000.00
Amount of stores sent from New York	$69,936.71	
Payment for hire of labor at New York	119.56	
Payment for labor, transportation, and telegrams by Captain Gallagher	527.29	
		70,583.56
Balance		4,416.44

Leaving a balance on hand of $4,416.44, from which sum the Subsistence Department is to be reimbursed for the amount of subsistence stores sent from San Juan, P. R. ($1,948.01), and which, owing to the extreme urgency of the case, had been ordered by the Secretary of War hurried forward from San Juan to the scene of disaster and suffering.

The following are the quantities referred to which were placed aboard the U. S. collier *Sterling* by Capt. J. T. Crabbs, assistant quartermaster and acting depot commissary at San Juan, and were among the first stores to reach their destination:

5,038 pounds bacon, issue	$553.68
1,632 1-pound cans salmon	175.44
20,000 pounds flour, issue	446.00
900 pounds hard bread	49.50
3,000 pounds beans	89.70
3,000 pounds rice	172.50
5,050 pounds sugar, issue	200.99
500 pounds salt, issue	2.20
528 cans milk, condensed	62.04
480 cans milk, evaporated	33.60
1,980 pounds coffee, ground, issue	162.36
The total cost of which amounted to	1,948.01

Captain Gallagher was directed by the Secretary of War to report by cable upon the condition of affairs in the islands, and to state whether the supplies taken were sufficient to meet wants and for how long. He replied by cable from Fort de France under date of May 21:

Effects of eruption confined to North American portion of island. St. Pierre and neighboring villages totally destroyed. Thirty thousand a fair estimate of loss of life of zone of destruction. Physical condition normal but people panic stricken. This condition was increased by yesterday's eruption, which was quite severe, but did not materially add to desolation. Supplies of all kinds sufficient for eight weeks. What has been done was just what the emergency demanded, and nothing further can be suggested. Government and people most grateful. *Dixie* now discharging part of cargo. Will proceed with what remains to St. Vincent.

GALLAGHER.

Captain Gallagher, in the course of a detailed report, dated June 13, 1902, to the Adjutant-General of the Army, in regard to the mission with which he was charged, said:

I wish to invite special attention to the willing and energetic manner in which the sailors aboard the *Dixie* labored in loading and unloading the stores on this expedition. They labored unceasingly when there was anything to do, without a murmur, and the rapidity with which the stores were handled was due to their energy and willingness. Their hearts seemed to be in their work, and, encouraged by their splendid officers, nothing seemed to tire them. The stores were well selected, and met the needs of the people. By the destruction of St. Pierre, Martinique, the great storehouse and source of supplies of the island was lost, consequently many of the necessaries of life were not available for the people, and nothing could have been more opportune than the arrival of the *Dixie*. The wants of the needy people were promptly and efficiently relieved, and on all sides I heard the people murmur their blessings on the American Government for sending assistance to them in this emergency. The same can be said of St. Vincent, where perhaps there were more people thrown upon the public, because many in the area of devastation escaped with their lives, while but few escaped at St. Pierre. From its conception to its conclusion the expedition was one in which the American people may feel a pardonable pride; it was a noble and generous thought that conceived it; it was timely in reaching its destination; it was most gratefully received by officials and people; and I hope I will be pardoned when I say that the officers appointed to carry out the will of the Government on this occasion, while performing their duty as ordered, could not help being filled with an extraordinary pride in the fact that they had been chosen to perform duty in connection with this completely successful and most humane expedition.

Great credit is due Captain Gallagher for the manner in which he discharged the humane and delicate mission with which intrusted, and demonstrates, as other occasions have gone to prove—Cuba and China—that he is notably a man for emergencies.

The following is an extract from a letter of thanks from his excellency R. B. Lewelyn, governor of the Windward Islands, to W. R. Corwine, esq., of the associated charities, New York, for the relief of the West Indian sufferers:

May I beg you to convey to Maj. David Brainard, commissary, United States Army, who so kindly collected the articles, my most cordial thanks to him and all who contributed on behalf of the sufferers from the eruption, who should ever gratefully remember the very generous and liberal help given to them at this time by the inhabitants of the United States of America.

ESTABLISHMENT OF PURCHASING DEPOT AT KANSAS CITY.

During the fiscal year a new subsistence depot was established at Kansas City for the purchase of subsistence stores, and especially with a view of securing a larger market for the supply of salt meats and meat products for the Army, which articles had been largely purchased in Chicago, particularly those for the supply of the Philippines.

In order to still further widen the field of competition and give the Government the benefit of the best market and prices, purchases of these articles were also authorized to be made at Omaha, especially those intended for consumption in the Philippines. By this means the Government is assured of the keenest competition in the three largest packing centers in the world—Chicago, Kansas City, and Omaha, in the order named.

Experienced officers with a practical knowledge of meats and meat products, and with special training in methods for curing them, were assigned to duty in this connection, which affords security to the Government against any mistakes which officers without special training in this most important work are liable to make.

DEPOT AT HONOLULU.

This depot has furnished supplies for the troops stationed in the Hawaiian Islands. Maj. W. W. Robinson, jr., quartermaster, and for a time acting depot commissary at Honolulu, states in a letter of November 14, 1901, addressed to Maj. W. H. Baldwin, purchasing commissary at San Francisco, who filled the requisitions for this depot:

> I desire to express to you my appreciation of the efficient and considerate manner in which this depot has been supplied with commissary stores during my administration as depot commissary since the 9th of last February. I am glad to be able to say that not a single complaint has ever been made to me regarding the quality and sufficiency of commissary stores required here, either for issue to troops or sales to officers or men.
>
> Due also to your kindly spirit of accommodation in the matter of exceptional stores, our messes have been constantly well supplied with fresh vegetables, fruit, etc., and I have never seen better service since I have been in the Army than we have been able to have here under your administration of the Subsistence Department in San Francisco.

Great credit is due Major Baldwin for the very satisfactory manner in which he has discharged the arduous and exacting duty of purchasing commissary at San Francisco during the year, while his management of the transport service has been all that could be desired.

TOUR OF INSPECTION OF GEN. JOHN F. WESTON.

Instructions contained in the letter of the honorable Secretary of War of June 13, 1901, modified by letter of July 24, 1901, directed me to proceed to Manila and such other points in the Philippines as I might deem necessary to carry out such instructions. I had the honor to submit, under date of August 23, 1901, from Manila, a special report dealing with subsistence affairs in the Philippine Islands. Among other features recommended were consolidation of warehouses at Manila, the abandonment of outlying subsistence depots, the transfer of surplus stores to the general supply depot at Manila, the sale of a lot of surplus stores at public auction, and that certain others be returned to the United States. My aim was concentration and reduction all along the line. The recommendations made have, as far as practicable, been carried out. Better but not sufficient storage facilities are now available, labor has been saved, expenses curtailed, the stores returned to the United States have nearly all been disposed of by issue and sales, and efforts are still proceeding along the general lines of consolidation and retrenchment indicated.

DIVISION OF THE PHILIPPINES.

I. GENERAL REMARKS.

Subsistence affairs in the Philippines have presented at all times complex and difficult problems, but the present period has been one of extreme difficulty to meet satisfactorily. New and shifting conditions have arisen at every step, and what is wisdom to-day becomes a futility to-morrow, so that it has been impossible to map out any definite plan or make a provident recommendation; but it is expected that a settled and satisfactory basis will soon be reached, and upon which intelligent action may be founded. The policy of concentration which has resulted in large reductions in military forces and posts, and by which troops are to be stationed at seacoast points and along the railroad, all make toward an early and satisfactory solution.

Col. Charles A. Woodruff, chief commissary of the Division of the Philippines, commenting on this unsettled state of affairs, says:

> On July 1, 1901, there were 554 posts in this division; these have been constantly reduced until May 31, 1902, there were 250, and on June 30, 1902, there were about 200. This constant and at times rapid reduction of posts necessitated a great deal of extra work and care in order to reduce many stores to a proper amount and prevent an accumulation. Many of the posts that were abandoned were in almost inaccessible localities and most of the transportation available was necessary for the removal of the troops, and the stores brought from these abandoned posts to depots and other posts were often in poor condition and unfit for reissue or sale without a great deal of rehandling and the condemnation of large quantities. Then, too, the active operations, especially in the provinces of Batangas and Laguna and in the islands of Samar and Mindanao, necessitated the shipments of large quantities of stores to these points in order that at all points there should be an abundance of supplies for the troops operating in those districts.
>
> Then, too, the constant movement of troops from these islands to the United States and from the United States to these islands, 28,591 having been returned to the United States during the year and 15,392 having been brought to these islands, and 16,128 troops were transported from Manila to interisland ports, and 17,534 brought from interisland ports to Manila, and other thousands from one interisland port to another without coming here; with the consequent changes of garrisons and the natural variations in the appetites and desires incident to such changes; also the abolition of the right to purchase by the employees of the insular government, which reduced the sales to civilians in this city (Manila) from $15,335.10 in August, 1901, to $3,277.60 in September, 1901, all combined to render the problem of supply a difficult one.

Maj. James N. Allison, chief commissary of the Department of North Philippines, is not less pointed and emphatic in the course of his interesting annual report regarding such a condition:

> As long as this transition state exists little progress can be made toward uniformity, proper system, or economy in the administration of affairs; and things may only be done as they can be done, not as they should be.

II. SOURCES OF SUPPLY.

The bulk of the ration articles, and many of those for sales to officers and enlisted men, were drawn from San Francisco, owing to its favorable location and market, which insured reasonable prices, and afforded a short route to the Philippines. New York was drawn upon for the bulk of articles intended for sales, while from Chicago, Kansas City, and Omaha, the three largest packing centers in point of production in the world, salt meats and meat products were procured. St. Louis supplied a limited number of articles which were produced there, or which that city could economically furnish.

Instructions have been given that whenever supplies can be procured at reasonable rates in Manila they are to be purchased in that market, which is now a point of supply for fresh beef, fresh mutton, potatoes, onions, rice, issue and granulated sugar, ice, butter, cheese, cigars, Australian milk, tansan water, stewards' stores for use on transports, and for exceptional articles.

III. TRANSPORTATION, COLD STORAGE, ICE, FRESH MEAT, AND FRESH VEGETABLES.

The most vital questions which concern the Subsistence Department, and now engaging its attention, are adequate transportation facilities to insure speedy delivery of perishable and essential articles, cold storage, ice for issue and for the preservation of meat, butter, lard, and other delicate and perishable stores, and the supply of fresh meat and fresh vegetables, and their prompt and satisfactory distribution.

Transportation.—The question of transportation is the most difficult and important one which has to be dealt with just now, and this is particularly true with regard to the Department of South Philippines. While it is recognized that there are difficulties incident to the situation, the fact remains that lack of adequate and satisfactory transportation facilities is the cause of just and endless complaint, and brings criticism and odium on the Subsistence Department for failure in a matter over which it has no control but which so vitally concerns it. Troops in many places are wholly dependent upon the Subsistence Department for their food supply and they complain of being deprived of supplies not only absolutely essential to health, such as beef, fresh vegetables, and ice, but others required for their wants and comfort. Large losses are entailed by delays in shipments of perishable stores. The chief commissary of the division of the Philippines says:

> The officer in charge of water transportation established several routes of supply that were satisfactory to the Subsistence Department, but many of these would scarcely be in working order before, owing to accident to some of the vessels or the fact that it was necessary to put some of the vessels out of commission for needed repairs, the schedule was broken; and this, with the further fact that the number of vessels with refrigerating capacity was small, has rendered this service unsatisfactory to this office.

It is earnestly recommended that two light-draft boats, with a refrigerating plant of about 75 tons refrigerating capacity, be provided for the Subsistence Department, to be used exclusively for carrying fresh meat, fresh vegetables, ice, and also the mail if it shall be deemed desirable. This transportation would permit of the speedy delivery of perishable articles of subsistence stores, which are very essential to the health and comfort of the troops, and would result in preventing enormous losses of stores, reduce labor and expense materially, and in the course of a few years the boats would almost save the Government what it costs to provide and operate them.

Cold storage and ice.—It is strongly urged that wherever permanent posts are built in the Philippines that cold storage be provided and ice-making plants constructed. I quote from the report of the chief commissary of the Division of the Philippines:

> Cold storage is absolutely necessary to secure an abundant supply of beef, and is of great benefit in preserving vegetables, butter, lard, etc., and ice is almost a necessity for the comfort of the strong as well as the sick; and while a limited amount of ice is issued to the troops, officers and families should be able to obtain it at a reasonable rate. As it is now, many expend nearly or quite as much for ice for domestic use as the extra pay they receive for foreign service.

tables are received from the contractor, picked over, assorted by hand (the contractor stands all loss due to sorting), recrated, and shipped to their destination, and, while losses as high as 50 per cent and even 90 per cent have occurred, the average loss on the total vegetables handled has been about 5 per cent. The large losses mentioned have been generally due to changes of destinations of vessels after loading or to unforeseen delays in delivery.

When it was impracticable to send fresh vegetables to distant and inaccessible points, desiccated vegetables were furnished as a substitute, but they have not in many instances given satisfaction. When neither fresh nor desiccated vegetables could be furnished troops, commutation of the fresh vegetable ration has been authorized.

IV. THE RATION AND SALES ARTICLES.

The utmost care has been exercised to supply the best quality of stores for issues and sales, and the chief commissary of the Division of the Philippines says on the subject:

> The ration has given excellent satisfaction to the troops. The native scouts, etc., prefer the components of our ration to their ordinary rice and fish diet, which was forced upon them by their poverty, and officers have reported that when hard work or marching was required from the natives, a diet containing meat was a necessity in order to secure the best results. The troops still continue to prefer the army bean rather than rice for the principal portion of their dried vegetable ration; bacon and beef are desired here as much as they are in the United States, and sugar is used to a much greater extent, and this office has been informed by medical officers that the good physical condition of the troops in these islands has been due largely to the abundance and the good quality of the subsistence stores.

By authority of the Secretary of War, and in accordance with the provisions of section 1144 of the Revised Statutes of the United States and paragraph 1351 of the Army Regulations, the following list of stores to be kept on hand for sales to officers and enlisted men in the Philippines was established and published in Circular No. 6, Office of the Commissary-General, 1901:

Articles.	Varieties.	Unit of weight or measure.	Kinds or sizes of packages preferred.
All articles which are components of the ration, and the following:			
Apples	Canned	Can	2½-pound cans.
Asparagus	do	do	2-pound cans.
Bacon, breakfast, dry-salt cure.	Sliced	do	1-pound cans.
Basins, hand	Granite	Number	
Beans	Stringless	Can	2-pound cans.
Beef	Chipped	do	1-pound cans.
Beef extract		Jar	4-ounce jars.
Blacking, shoe	American	Box	4-ounce boxes.
Blanco	Khaki	do	8-ounce boxes.
	White		
Bluing	Powdered	do	2-ounce boxes.
Brooms, whisk	Medium size	Number	
Brushes, blacking	No. 2	do	
Brushes, hair	Medium	do	
Brushes	Nail	do	
Do	Shaving	do	
Do	Tooth, assorted	do	
Butter		Pound	
Buttons, bone	L. and S.	Number	
Buttons, collar	No. 1 size	do	
Candy	Three varieties	Pound	
Can openers	Plain	Number	
Chamois skins	2 to 2½ feet square	do	
Cheese	American	Pound	
	Edam	Number	
Cherries	Canned	Can	3-pound cans.
Chocolate	Plain	Pound	1-pound packages.
	Vanilla		
Cigars	Three brands	Number	Boxes; ½ boxes.

Articles.	Varieties.	Unit of weight or measure.	Kinds or sizes of packages preferred.
Cinnamon	Ground	Pound	¼-pound tins.
Clothespins		Number	5-gross boxes.
Cloves	Ground	Pound	¼-pound tins.
Cocoa	Breakfast	Tin	½-pound tins.
Coffee, extra	Java	Pound	Commercial packages.
Coffee, roasted	Mocha	do	Do.
Combs	Fine, rubber	Number	
Do	Pocket, rubber	do	
Do	Rubber, medium	do	
Corn	Green	Can	2-pound cans.
Crackers	Ginger, soda	Pound	5-pound tins.
Currants		Tin	2-pound tins.
Electro silicon		Box	3-ounce boxes.
Envelopes, letter	Best	Number	Boxes of 250.
Envelopes, note	do	do	Boxes of 125.
Flavoring extract	Lemon Vanilla	Bottle	2-ounce bottles.
Gelatin		Packet	2-ounce packets
Ginger ale	Imported	Bottle	Pint bottles.
Ham	Deviled	Can	½-pound cans.
	Dry-salt cure	Pound	Tierces.
Handkerchief, linen	Medium size and quality	Number	
Handkerchief, silk	White	do	
Ink	Black	Bottle	3-ounce bottles.
	Indelible	do	2-ounce bottles.
Jam	Assorted blackberry and strawberry.	Can	2-pound cans.
Jelly	Currant	do	Do.
Lard	Choicest	do	5-pound cans.
		Pail	5-pound pails.
Listerine		Bottle	14-ounce bottles.
Lobster	Canned	Can	1-pound cans.
Lye	Concentrated	do	Do.
Macaroni		Pound	1-pound packages.
Matches	Safety	Box	60's.
Milk	Condensed "Eagle" Evaporated "Highland Cream."	Can	1-pound cans.
Do	Australian, condensed	Gallon or can.	
Mushrooms	Canned	Can	½ cans.
Mustard	French	Bottle	8-ounce bottles.
	Ground	Pound	½-pound tins.
Needles	Nos. 3 to 9	Papers	
Nutmegs	Whole, 65s to 70s	Pound	
Oatmeal	Rolled, compressed	do	2-pound tins.
Oil	Olive	Bottle	Quart bottles.
Olives		do	Pint bottles.
Oysters	Canned	Can	2-pound cans.
Paper, letter	Best	Quire	5-quire packages.
Paper, note	do	do	Do.
Paper, toilet	Flat	Package	
Peaches	Canned	Can	3-pound cans.
Pears	do	do	Do.
Peas, green	American, 1 variety	do	2-pound cans.
Pencils, lead	American, black, No. 2	Number	12 to carton.
Penholders	Rubber	do	
Pens	Coarse, fine, stub	Gross	
Pepper, red	Cayenne	Pound	2-ounce bottles.
Pickles	Chowchow, gherkins, mixed	Jar	Pint jars.
Pineapples	Canned	Can	2-pound cans.
Pins		Pyramid	12 to carton.
Pipes, brierwood	Nos. 1 and 4	Number	
Plum pudding		Can	2-pound cans.
Polish, shoe	Whittemore's black Whittemore's russet	Box or bottle.	
Preserves	Damson, raspberry, and strawberry.	Can	Do.
Raisins	Boxed	Pound	Boxes.
Razors		Number	
Razor strops	Reppenhagen	do	
Salt, table		Bottle	2¼-pound bottles.
Sardines	Boxes		¼ boxes.
Sauce	Tomato catsup	Bottle	Pint bottle.
	Worcestershire	do	½-pint bottles.
Sauerkraut		Pound	10-gallon kegs.
Sausage	Vienna	Can	2-pound cans.
Shoestrings	Linen and porpoise	Pair	
Soap	Cuticura, glycerin (Pear's) Lettuce Oatmeal	Cake	
	Shaving	Stick	
	White floating Sapolio	Cake	
Soup	Beef, chicken, clam chowder, mock turtle, oxtail.	Can	Quart cans.
Sponges	Large	Number	

Articles.	Varieties.	Unit of weight or measure.	Kinds or sizes of packages preferred.
Starch	Corn	Pound	1 pound packages.
	Laundry		
Sugar, white	Cut loaf, hard	do	Barrels; ½ barrels; 50-pound boxes.
	Granulated, fine	do	Barrels; ½ barrels; 100-pound double sacks.
	Powdered	do	½ barrels; 50-pound boxes.
Tablets, letter and note	Best	Number	
Talcum powder	Small tins	do	
Tansan water		Bottle	
Tapioca	Granulated	Pound	1-pound packages.
Thread	Cotton (black, white, khaki).	Spool.	
	Linen (black, white)		
	Silk (black)		
Tobacco	Plug (Climax)	Pound.	
	Smoking (Durham)		
Toilet water	Colgate's	Bottle	Pint bottles.
Tongue	Beef	Can	2-pound cans.
Tooth powder		Box, bottle, tube.	
Towels	No. 2 huck. and cotton bath.	Number.	
Towcling	Unbleached	Yard.	
Witch-hazel		Bottle	Pint bottles.
Wheat, rolled		Pound	2-pound tins.

At one time as many as 300 different articles of stores for sales was authorized and supplied, but the number is now limited to about 150. During the year the sales throughout the archipelago reached the grand total of $2,022,122.09.

V. GENERAL DEPOT OF SUPPLY.

The general depot of supply is at Manila and under the charge of Maj. Barrington K. West.

Some idea of the magnitude of its transactions can be realized when it is considered that all subsistence stores and property received and distributed in the Division of the Philippines are handled by this depot. It has received and supplied as high as 300 different articles during the year; and the stores shipped, issued, and sold, for the use of officers, enlisted men, and the sick, amounted to a total money value of $5,125,070.58, and special steward stores amounted to $20,835.78. The monthly average of stores received, shipped, and handled was about 16,000,000 pounds, and a total of 187,528,372 pounds, net, was handled for the year.

A loss of only $627.35 was incurred in unloading $1,906,902.25 worth of cargo, transporting of same 2 miles in cascoes, and placing the supplies in storehouses, which is most creditable to the depot commissary, the officer in charge of water transportation and those connected with their offices.

One of the pressing needs of the Subsistence Department in connection with the shipment from the depot of stores of a perishable nature, such as fresh meat, fresh vegetables, and ice, is two light-draft steamers with ice plant, and arranged especially for the delivery of these articles. While the greatest care at the depot is observed in handling such stores, yet owing to the lack of speedy transportation large losses are sustained on these very perishable articles, due to deterioration en route on commercial vessels, which are delayed or diverted from their courses long enough to cause the loss of all the vegetables and possibly the meat, and at the same time the troops are deprived of these highly appreciated articles so essential to their health and comfort.

Tremendous responsibilities have devolved upon Major West, which he has been equal to in every way. He has carefully guarded the public interests, systematized the work, reduced expenses, and labored incessantly. Col. J. P. Sanger, inspector-general of the Philippines, in his report of an inspection of the depot, stated:

> Major West is an excellent officer in every respect and a model commissary, and the condition of the depot reflects great credit on him and his assistants.

VI. SALES DEPOT AT MANILA.

This depot is in charge of Capt. Douglas Settle, and practically furnished the food supply of the Army, Navy, Marine Corps, and civilians authorized to purchase, stationed in and about Manila. On an average about 5,000 persons were supplied from this depot.

Stores to the value of $480,609.31 were handled at an expense of 5½ per cent, which includes salaries, rent, ice, forage, etc.; and losses from condemnation on this total was only $1\frac{1}{16}$ per cent, which is a most creditable showing when it is considered that business houses usually count upon 10 per cent and more for expenses in the transaction of business.

There was in addition to all other items stores valued at $185,443.20 transferred to the Navy from the depot, besides large quantities supplied vessels at Cebu, Candon, Iloilo, Zamboanga, Tacloban, and other points.

VII. SUPPLY OF CONCENTRATION CAMPS.

Among other factors which have helped to swell the vast volume of labor performed by the Subsistence Department has been the supply of concentration camps.

The chief commissary of the Division of the Phlippines has the following remarks touching the supply of enormous quantities of rice to these concentration camps, which involved a large amount of gratuitous labor by the Subsistence Department:

> When it was decided to concentrate the inhabitants of Batangas and Laguna in camps, where they could be protected from the insurgents, General Bell made arrangements with this office to supply these people through officers, designated by himself, an abundance of food to prevent any suffering. The method was to collect from the wealthy classes a percentage more than the rice cost, yet less than they have been in the habit of paying for it; the middle classes were supplied at cost and the poor classes were supplied from a surplus resulting from sales to others, and these poor people, if able to work, were placed at road building and other public improvements, and paid with this surplus rice. Under this arrangement 14,000,000 pounds of rice have been supplied to the natives of these two provinces, besides a quantity of sugar and salt. The natives have received the rice for less than they would have had to pay in times of profound peace, and the Subsistence Department has not been called upon to reduce its appropriation one dollar. I inspected several of the concentration camps where there was peace, plenty, comfort, and apparently happiness, and am satisfied that while they were originally intended for protection to the natives and assistance to the military authorities, they really became to the natives of the country camps in instruction and sanitation, and the poorer people were better off in every way than ever before.

VIII. LOSSES.

A variety of causes led to large losses during the year. These losses resulted in the main from conditions which could not be foreseen or provided against. Among the prolific sources was a lack of adequate and proper transportation facilities; quarantine regulations which were established on account of Asiatic cholera, and necessitated perishable articles like fresh vegetables remaining in quarantine for at least five days; the lack of proper cold-storage facilities, fire, theft, and the

condemnation of large quantities of old stores accumulated throughout the islands, which surplus was, as the chief commissary of the Division of the Philippines states:

Due to the reduction in the number of troops, reshipment here of stores intended for China, to military necessities occasioned by the rapid concentration of troops for active operations in the field, then their withdrawal or movement to other points, and the difficulty, owing to lack of mail facilities and inexperience of many post commissaries, of getting full and prompt reports; but as far as practicable these stores have been issued or sold. The fact that some of these have been on hand for a long time, and, in some cases, shipped and reshipped, has been the cause of many condemnations.

The total amount of losses for the entire archipelago during the period was:

Damaged	$277,156.90
Shortages	33,160.92
Stolen	1,876.61
Lost in transit	12,873.82
Lost by fire	29,146.16
Grand total	354,214.41

And Colonel Woodruff in commenting on this still further remarks:

This grand total of losses pertains not only to the $5,125,070.58 shipped, but to $1,548,765.05 value of stores in depot June 30, 1902, and to $2,000,000 approximate value of stores on hand at the various posts June 30, 1901, or to stores of a total value of $8,673,835.63, making the total losses from all causes about 4 per cent, not taking into consideration the amounts received from sale of damaged stores, for shortages when responsibility was fixed, and for collection from contractors for those lost in transit, the exact amounts of which are not known at this office.

* * * * * * *

Respectfully submitted.

J. F. WESTON,
Commissary-General.

The SECRETARY OF WAR.

REPORT OF THE SURGEON-GENERAL.

WAR DEPARTMENT, SURGEON GENERAL'S OFFICE,
Washington, D. C., September 6, 1902.

SIR: In rendering this report I have the honor to submit first, a statement of disbursements made during the fiscal year ended June 30, 1902.

FINANCIAL STATEMENT, 1902.[a]

Medical and hospital department, 1902.

Appropriated by act approved March 2, 1901		$2,000,000.00
Sales to Quartermaster's Department	$588.00	
Sales to civil government, Philippine Islands	23,206.69	
Sales to States and Territories for use of National Guards	2,266.64	
Other refundments during the year (including transfer settlement by Treasury Department to adjust appropriations, $619.31)	902.59	
		26,963.92
Total to be accounted for		2,026,963.92

[a] The disbursements in this statement include settlements with public creditors made by the accounting officers of the Treasury and charged by them to these appropriations.

Disbursed during the year:		
Expenses of medical supply depots	$493.02	
Medical supplies	286,804.37	
Medical attendance and medicines	11,240.50	
Medical expenses of recruiting	48,875.64	
Pay of nurses	3,975.95	
Pay of other employees	122,170.48	
Washing of hospital linen	40,960.43	
Expressage	127.60	
Notary fees	93.90	
		514,741.89
Transferred by Treasury settlements to adjust appropriations		333.54
Balances on hand June 30, 1902:		
In United States Treasury and in transit thereto	[a]$1,436,615.30	
In hands of disbursing officers—		
New York City	30,701.85	
Washington, D. C	11,661.20	
St. Louis, Mo. (and in transit thereto)	13,862.83	
San Francisco, Cal	7,551.57	
Havana, Cuba	676.81	
Manila, P. I	10,737.94	
Iloilo, P. I	64.92	
Pekin, China	16.07	
		1,511,888.49
Total accounted for		2,026,963.92

Medical and hospital department, 1901.

Balances on hand July 1, 1901, acts of May 26, 1900, and March 3, 1901		$343,031.78
Sales to States for use of National Guards	$148.08	
Other refundments during the year (including transfer settlements by Treasury Department to adjust appropriations, $333.54)	777.95	
		926.03
Total to be accounted for		343,957.81
Disbursed during the year:		
Expenses of medical supply depots	$91.92	
Medical supplies	99,983.27	
Medical attendance and medicines	2,869.56	
Medical expenses of recruiting	4,662.50	
Pay of nurses	569.70	
Pay of other employees	6,412.55	
Washing of hospital linen	6,314.25	
		120,903.75
Transferred by Treasury settlement to adjust appropriations		619.31
Balances on hand June 30, 1902:		
In United States Treasury	$219,232.22	
In hands of disbursing officer, Washington, D. C	3,202.53	
		222,434.75
Total accounted for		343,957.81

Medical and hospital department, 1900.

Balances on hand July 1, 1901, acts of March 3, 1899, and February 9, 1900	$110,222.28
Refundments during the year	77.07
Total to be accounted for	110,299.35

[a] Of this amount $1,000,000 was transferred July 1, 1902, to the appropriation "Medical and hospital department, 1903," by virtue of the act approved June 30, 1902.

Disbursed during the year:		
Medical supplies	$5.37	
Medical attendance and medicines	192.31	
Medical expenses of recruiting	172.55	
Pay of employees	431.00	
Washing of hospital linen	22.35	
Exchange on funds to island possessions	28.65	
		852.23
Carried to surplus fund		109,447.12
Total accounted for		110,299.35

Medical and hospital department, 1899 and prior years.

Refundment during the year	$15.00
Carried to surplus fund	15.00

Medical and hospital department, certified claims.

Appropriated by act approved February 14, 1902	$662.01	
Appropriated by act approved July 1, 1902	4,226.66	
		$4,888.67
Disbursed		4,888.67

Appropriation for national defense, certified claims.

Appropriated by act approved July 1, 1902	$70.50
Disbursed	70.50

Reimbursement to contract nurses (traveling expenses).

Balance on hand July 1, 1901, act of June 6, 1900	$3,322.56
Disbursed during the year	19.88
Balance in United States Treasury June 30, 1902	3,302.68
Total accounted for	3,322.56

Artificial limbs, 1902.

Appropriated by act approved March 3, 1901	$125,000.00
Disbursed during the year	116,185.00
Balance on hand June 30, 1902	8,815.00

Artificial limbs, 1901.

Balance July 1, 1901, act of June 6, 1900	$16,185.39
Disbursed during the year	5,482.58
Balance on hand June 30, 1902	10,702.81

Artificial limbs, 1900.

Balance July 1, 1901, act of March 3, 1899	$36,334.00
Disbursed during the year	991.85
Carried to surplus fund	35,342.15
Total accounted for	36,334.00

Artificial limbs, 1899.

Balance July 1, 1901, act of July 1, 1898	$4.68
Carried to surplus fund	4.68

Artificial limbs, certified claims.

Appropriated by act approved—	
February 14, 1902	$121.96
July 1, 1902	41.76
Total to be accounted for	163.72
Disbursed	163.72

Appliances for disabled soldiers, 1902.

Appropriated by act approved March 3, 1901	$2,000.00
Disbursed during the year	1,375.35
Balance on hand June 30, 1902	624.65

Appliances for disabled soldiers, 1901.

Balance July 1, 1901, act of June 6, 1900	$545.48
Disbursed during the year	63.00
Balance on hand June 30, 1902	482.48

Appliances for disabled soldiers, 1900.

Balance July 1, 1901, act of March 3, 1899	$905.25
Carried to surplus fund	905.25

Army Medical Museum, 1902.

Appropriated by act approved March 2, 1901	$5,000.00
Disbursed during the year	2,838.44
Balance on hand June 30, 1902	2,161.56

Army Medical Museum, 1901.

Balance July 1, 1901, act of May 26, 1900	$2,110.30
Disbursed during the year	1,550.16
Balance on hand June 30, 1902	560.14

Army Medical Museum, 1900.

Balance July 1, 1901, act of March 3, 1899	$660.43
Carried to surplus fund	660.43

Library, Surgeon-General's Office, 1902.

Appropriated by act approved March 2, 1901	$10,000.00
Disbursed during the year	7,110.57
Balance on hand June 30, 1902	2,889.43

Library, Surgeon-General's Office, 1901.

Balance July 1, 1901, act of May 26, 1900	$3,324.13
Disbursed during the year	3,260.64
Balance on hand June 30, 1902	63.49

Library, Surgeon-General's Office, 1900.

Balance July 1, 1901, act of March 3, 1899	$11.21
Carried to surplus fund	11.21

Furnishing trusses to disabled soldiers (sections 1176, 1177, and 1178, Revised Statutes, and act of March 3, 1879).

Expended during the year	$7,016.66

Relief of citizens of the French West Indies (act approved May 13, 1902).

Drawn by the Medical Department of the Army	$5,000.00
Balance on hand June 30, 1902	5,000.00

CONTRACT DENTAL SURGEONS.

The organization of the Corps of Dental Surgeons authorized by the army reorganization bill approved February 2, 1901, is still in progress. On December 31, 1901, the corps was composed of 28 appointees. Of this number, 3, employed as examining and supervision dental surgeons, constituted the board of examiners for this service. Twenty candidates had passed the examinations of the board of examiners and 5 were appointed from the Army under the provisions of the act without examination by the board.

The report of the examining board shows that up to December 31, 1901, 87 candidates had been invited from the various States and Territories to take the examination. Six of these declined to appear, 10 accepted the invitation but failed to report, and 71 reported for examination. Of the 71 who reported for examination, 20 were found qualified and approved, 8 were physically disqualified, 3 failed in both the theoretical and practical examinations, 7 failed in the theoretical examinations, and 33 withdrew before completion of the theoretical examinations. Of the 43 who failed or withdrew, 15 requested and were accorded a second examination, 5 of whom passed. The number of candidates who passed upon their first examination was 15, those who passed upon the second examination were 5. Of the 28 dental surgeons appointed, 1 was assigned to duty in the Department of Cuba, 1 to the island of Porto Rico, 17 to the Division of the Philippines, and 9 to stations in the United States. The following tabulation shows the distribution of the dental surgeons and the date of arrival at their first stations:

	United States.	Philippines.	Cuba.	Porto Rico.	Total.
1901.					
February	3				3
March					
April		2			2
May					
June		6			6
July	2	3	1		6
August	4	3		1	8
September		2			2
October		1			1
November					
December					
Total	9	17	1	1	28

Upon the adjournment of the examining board, which held continuous sessions at Washington, D. C., from February 18 to July 31, 1901, the members of the board were assigned to duty, one to the Depart-

ment of Cuba, one to the Division of the Philippines, and one to the Department of California.

To facilitate the work of the corps each dental surgeon is provided with at least one assistant, who is detailed from the privates or acting stewards of the Hospital Corps. In some instances, as at the United States Army general hospital, Presidio of San Francisco, Cal., where the amount of dental service required is very great, extra details were made from the Hospital Corps of such men as showed aptitude for or had had experience in this line of work before entering the Army.

The energies and resources of the Dental Corps have been taxed to their fullest extent in caring for those officers and enlisted men who have sought their services for the relief of suffering, and this has made it necessary in some instances for the dental surgeons to operate daily from 8 a. m. to 5 or 6 p. m. The great amount of service that has been rendered by the dental surgeons could not have been accomplished but for these long hours of work and the assistance accorded them through the extra details of members of the Hospital Corps.

The whole number of patients, regulars and volunteers, that have been treated during the period covered by the reports of dental surgeons in this office are 9,148.

	Regulars.	Volunteers.
United States	2,872	7
Philippine Islands	5,174	16
Cuba and Porto Rico	1,079	.....
Total	9,125	23

The reports from the Philippine Islands were still incomplete when this résumé was prepared, some stations being two and three months behind, and as a consequence it does not show the actual amount of service rendered by the dental surgeons in the Philippine Division.

The services of the dental corps, however, made a highly creditable showing when the facts are taken into consideration that the corps was not fully organized at the close of the year; that much delay was experienced in transporting them to their first stations and equipping them for service. The reports in this office cover the period from June 1 to December 31, 1901, but a reference to the table of distribution of dental surgeons and date of arrival at first station will show that active work did not begin in the United States, Cuba, and Porto Rico until July and August, while in the Philippine Islands, although several dental surgeons reported for duty in Manila in June and July, active work was delayed until a still later period on account of the difficulties experienced in transporting supplies over so great a distance and the obstacles which always surround the launching of a new enterprise or a new line of service.

The character of the service so far rendered by the dental surgeons has, by reason of the great number of patients who have applied for treatment, been largely of an emergency nature, and the constant effort has been made to so treat the cases as to return the men to duty with the least possible delay and loss to the service.

The tabulations[a] of diseases and injuries of the mouth and jaws, of the teeth and gums, and of operations and treatment which follow,

[a] Not printed.

show that a large part of the time and skill of the dental surgeons was expended in giving relief from the suffering caused by dental caries, pulpitis, pericementitis, alveolar abscess, pyorrhea alveolaris, and gingivitis. The comparatively large number of teeth extractions is due to the great prevalence of dental caries of a severe type among the enlisted men who are serving or have served in Cuba, Porto Rico, or the Philippines. Instructions were issued to the dental surgeons to conserve as far as possible all teeth that could be placed in a healthy condition by appropriate treatment, so as to reduce the loss of teeth to the minimum, and these instructions have been generally carried out.

It seems to be an established fact than dental caries takes on more active symptoms among our troops after a few months' residence in a tropical climate, but whether this is due to neglect of a proper hygienic care of the teeth during active campaigning or to the depressing effect of a tropical climate upon assimilation and vital resistance in individuals going from a temperate zone, or to the necessary changes in the character of the food, remains to be demonstrated. It would seem more than probable, however, that it is due to the effects of all these conditions combined.

A reference to the statistical tables will also show that pyorrhea alveolaris and inflammatory and ulcerative conditions of the gums and oral mucus membrane are very prevalent among the officers and enlisted men who have served or are serving in the tropics. These conditions are more noticeable in those who have been in the Philippines for a considerable period and in those who have suffered from certain forms of illness. These conditions seem to be largely due in the former to the enervating and debilitating effects of the hot climate, etc., and in the latter to such wasting diseases as gastritis, diarrhea, dysentery, and the continued fevers.

Total number of treatments and operations, medical, surgical, and mechanical:

	Regulars.	Volunteers.
United States	4,766	33
Philippine Islands	6,959	49
Cuba and Porto Rico	1,691	
Total	13,416	82

The following tables,[a] compiled from 8,408 cases of dental caries treated by filling or extraction, shows the susceptibility of the individual teeth to this disease in the troops stationed in the United States, the Philippine Islands, Cuba, and Porto Rico:

The percentage of caries is considerably higher for the central and lateral incisors and cuspids, both upper and lower, than is usually given in published statistics, being in some instances more than double. In the bicuspids, upper and lower, the percentage agrees very closely with published statistics, while in the first molars, both upper and lower, it is about 4 per cent less. The latter variation may be accounted for from the fact that the first molars are very frequently lost from caries before the individual reaches the legal age for enlistment. In the second and third molars the variation in the percentage is not very different from published statistics. The comparatively low percentage

[a] Not printed.

of dental caries in the bicuspids and the second and third molars may also be accounted for by the fact that it was not a bar to enlistment during the Spanish-American war if the applicant had only two opposing molars, one above and one below, upon opposite sides of the mouth. Many men were therefore enlisted who had already lost the bicuspids and the other molars.

In view of these facts it would seem advisable to raise the requirement of the number of opposing molars that should be possessed by the recruit and that the general condition of all of the teeth should be taken into account before accepting him. Applicants who show signs of extensive dental caries should not be accepted for service, as such men are constantly being carried upon the company sick book on account of incapacity for duty resulting from dental diseases or have to be discharged on account of their inability to properly masticate the army ration.

The services of the Dental Corps have been highly appreciated by the officers and enlisted men of the Regular and Volunteer Armies and have proved very satisfactory to the Medical Department, because they have been able to relieve a great amount of acute suffering and to conserve a large number of teeth and restore them to a healthy condition, thus almost immediately returning to duty many cases that were previously carried for several days upon the company sick report. This has resulted in greatly reducing the loss of valuable time to the service, incident to diseases of the mouth, teeth, and jaws, and relieving and hastening the cure of such gastric and intestinal disorders as were due to defective mastication and infective and suppurative conditions of the teeth and oral cavity.

The cost of maintaining the Dental Corps is small when compared with the relief from suffering obtained and the greater efficiency of the officers and men who have received the service of the dental surgeons. Good teeth are an essential factor in maintaining the general health of our troops, and consequently their efficiency, and on account of the increasing prevalence of dental caries and the abnormal condition growing out of the disease the dental surgeon has become a necessity to the Army. Early provision should therefore be made for the establishment of a permanent corps of dental surgeons attached to the Medical Department.

HOSPITAL CORPS.

At the date of last report, June 30, 1901, the total strength of the corps was 4,336 men, viz:

Hospital stewards	246	
Acting hospital stewards	388	
Privates	3,702	
		4,336

Since then it gained, up to June 30, 1902—

By enlistment and reenlistment	1,282	
By transfer from the line	548	
From desertion	18	
		1,848
Total		6,184

And lost during the same period—

By discharge per expiration of service	1,772	
By discharge by order	112	
By discharge by sentence of general court-martial	34	
By discharge on surgeon's certificate of disability	66	
By retransfer to line	17	
By retirement	6	
Killed in action	1	
By death due to disease	32	
By death due to drowning	2	
By death due to suicide	2	
By death due to accident	6	
By desertion	92	
		2,142
Leaving in service June 30, 1902, a total of		4,042
Hospital stewards		271
Acting hospital stewards		405
Privates		3,366
		4,042

Hospital stewards.—The number of hospital stewards allowed by law is 300. Forty-four vacancies existed on June 30, 1901; 15 men were appointed during the past fiscal year, leaving 29 vacancies June 30, 1902, which were filled September 1 as the result of the examination held in May. The reports of the examining boards, together with written examination, were received at this office from the Division of the Philippines August 20, 1902.

The total number of applicants in the Division of the Philippines for the examination for the position of hospital steward held at this time was 42. Two of these were disapproved. Of the 40 approved applicants 2 were discharged prior to examination, 3 reported too late for examination, and 13 withdrew from examination, leaving 22 who were fully examined. Of these 22, 13 were recommended and 9 not recommended for appointment by the local boards. Of the 13 recommended 5 averaged in the written examination between 80 and 90, 7 between 70 and 80, and 1 failed.

Forty-five applications were received from acting hospital stewards serving in the United States, Alaska, and Cuba, 2 acting stewards withdrew, and 4 were not examined, 1 being at sea and 3 in Alaska. Of the 39 examined 8 were not recommended by the local boards, 5 failed to reach the minimum (70 per cent), and 26 made over 70 per cent, 8 over 90 per cent, 11 from 80 to 89, and 7 from 70 to 79 per cent. Of the 8 who made over 90 per cent, 7 have been appointed hospital stewards and 1 is awaiting for a few days completion of his twelve months' service as acting hospital steward, as required by law.

The questions for this examination were prepared in the Surgeon-General's Office, each set inclosed in a separate envelope, carefully sealed with wax, and forwarded to the respective chief surgeons, with directions that the president of each of the different examining boards should retain the envelope in his personal possession, open it only on the day of the examination, and certify that it was received in good condition.

During the year 207 acting hospital stewards have been detailed, 46 by the Surgeon-General and 161 by chief surgeons, the latter as follows:

Department of California	9
Department of the Colorado	1
Department of the Columbia	6
Department of Dakota	3
Department of the East	24
Department of the Missouri	12
Department of Texas	1
Department of the Lakes	7
Department of Cuba	6
Division of the Philippines	92
Total	161

Within certain limitations the number of promotions to the grade of acting hospital steward is an excellent index of the results of the systematic instruction of the Hospital Corps now being carried on throughout the Army. The regulation proportion of one noncommissioned officer to four privates has not yet been attained, but it is believed that in a short period it will be.

In order to increase the efficiency of the Hospital Corps and give the private soldiers the same opportunity as that enjoyed by those of the line, the Surgeon-General recommended in August, 1901, the addition of a paragraph to the regulations authorizing the appointment of lance acting hospital stewards. This authority was granted in General Orders, No. 139, Adjutant-General's Office, November 2, 1901. This affords an opportunity to test the men as to their qualifications for the position of noncommissioned officers and has worked very well up to the present time. Ninety lance acting hospital stewards have been detailed, of which number 12 were ultimately promoted to the grade of acting hospital steward.

Recruitment.—In September, 1901, the commanding general, Division of the Philippines, reported by cable that no more enlisted men of the Hospital Corps were needed in that division. In consequence thereafter recruiting for the corps was, for a short time, confined to soldiers who had been discharged with excellent character, or to recruits who possessed special qualifications.

In November, nothing further upon this subject being heard from the Division of the Philippines, the Surgeon-General invited the attention of the Adjutant-General to the fact that a large number of discharges by expiration of term of service would occur in the Hospital Corps during the next four months (about 1,275), which would materially reduce the strength of that organization in that division, where most of the men enlisted late in 1898 and early in 1899 had been sent. As it was not believed that any considerable number of these men would reenlist in the Philippines, and as there was no reserve in the United States at the time beyond 200 men at the utmost to replace the above-mentioned losses, it was believed that a very considerable number of men, including noncommissioned officers, would be needed for the Division of the Philippines, the strength of the corps in the division being then 2,500 men.

In view of the fact that recruits for this branch of the service should be given not less than four months' instruction in the rudiments of their work, preferably with a company, it is suggested as important that general recruitment be begun at the earliest possible moment.

In response to the inquiry from the War Department General Chaffee, commanding the Division of the Philippines, on November 12 cabled to the Adjutant-General that with the present number of stations in his division the chief surgeon required 2,400 men of the Hos-

pital Corps and asked that 300 leave the United States December 1, 1901, and 110 each succeeding month for six months. He also stated that he could not fill the vacancies already caused by the departure of men for the United States.

The commanding general, Department of California, was thereupon ordered to resume the transfer of men of the Hospital Corps from the United States to the Philippines, so far as practicable to replace, man for man, the losses in that division, and the Adjutant-General invited the attention of the general recruiting officers to the fact that recruits were now urgently needed for the Hospital Corps, and directed them to report all applicants who were suitable and desired to enter this corps. He advised them that it was not absolutely necessary that applicants should have had previous service in the Army, or preliminary training as druggists, pharmacists, nurses, etc., since any bright, healthy, active young man could be enlisted, provided he had a good common school education and was of good moral character, as evidenced by recommendations. The enlistment of minors for the corps was not desired.

Under these instructions the recruitment has progressed very satisfactorily during the past year, and much credit is due to the officers of the general recruiting service for the zeal they have displayed in obtaining recruits for the Hospital Corps. A considerable number of enlistments from civil life were also made by chief surgeons to fill vacancies within their departments up to the quota allowed by existing regulations. The authority heretofore granted to chief surgeons to make enlistments without reference to this office and recommend transfers from the line to the Hospital Corps within their departments has worked admirably, saving much clerical labor to this office. It also enabled chief surgeons to meet emergencies immediately, without the former circuitous requisition upon the War Department for additional assistance.

In the Department of the East, for example, there were 154 transfers from the line to the Hospital Corps and 35 enlistments; in that of the Missouri, 20 transfers from the line and 43 enlistments and reenlistments, and in that of Texas, 30 transfers from the line and 5 enlistments. In California 276 men were transferred from the line and 187 were enlisted.

Distribution of the Hospital Corps, United States Army, May 31, 1902, as shown by latest information on file in this office.

	Number of troops.	Hospital stewards.	Acting hospital stewards.	Lance acting hospital stewards.	Privates.	Total.	Per cent Hospital Corps.
California	4,214	24	22	12	269	327	.....
Colorado	2,950	12	5	2	89	108	3.66
Columbia	2,885	13	13	.....	95	121	4.19
Dakota	1,860	8	6	1	56	71	3.81
East	13,019	44	32	2	359	437	3.35
Lakes	2,878	5	13	.....	71	89	3.09
Missouri	4,794	10	16	1	131	158	3.28
Texas	2,350	4	6	3	73	86	3.66
Independent	1,750	22	34	2	248	306	.....
Total United States	36,700	142	147	23	1,391	1,703	4.64
Cuba	900	5	4	.....	27	36	4.00
Porto Rico	1,500	3	4	.....	30	37	2.46
Hawaii	230	1	2	.....	18	21	9.13
China	114	1	.....	.....	6	7	6.14
Philippines	47,400	118	210	33	1,762	2,123	4.48
At sea	76	.....	16	.....	73	89	.....
Total	86,920	270	383	56	3,307	4,016	4.62

The number of posts and stations (including United States army transports) was during the last quarter of the fiscal year nearly as follows:

In the United States (including Alaska, Porto Rico, and Hawaii)	156
In Cuba	4
In China	1
In the Philippine Islands	333
Total	494

According to the reports of chief surgeons and inspectors the efficiency, discipline, and instruction of the Hospital Corps are constantly improving, the best evidence of which is the number of noncommissioned officers who have passed the really severe examination required for promotion. The instructional work of the various posts has generally been well done.

Owing to the reduction of the strength of our forces without the United States and the increase of the home garrisons, causing the reoccupation of abandoned posts, the demands upon the departments to supply men for the Hospital Corps has been great, but were very generally met without calling upon this office for assistance. As a result of these demands it has been found impracticable to always maintain the detachments of instruction at the prescribed strength, or to keep the recruits under instruction long enough to fit them to undertake the practical work of a Hospital Corps man. Nevertheless the requirements have been very well met. It is believed that with the final determination of the strength of the Army and its distribution the detachments of instruction will prove an important adjunct to the medical service in the departments.

The company of instruction at the general hospital, Washington Barracks, has been maintained at the highest state of efficiency, in which connection attention is invited to the following excerpt[a] from a report by its efficient commander, Capt. F. P. Reynolds, assistant surgeon, U. S. Army.

Organization of the Hospital Corps company of instruction, United States Army, general hospital, Washington Barracks, D. C.

NONCOMMISSIONED OFFICERS.

First sergeant	1	Police sergeant	1
Property sergeant	1	Head cook	1
Mess sergeant	1	Instructors and assistant instructors	10
Company clerk	1		
Stable sergeant	1	Total	17

PRIVATES ON SPECIAL DUTY.

Second cook	1	Company clerks	2
Kitchen police	2	Trumpeters	2
Dining-room attendant	1	Mail orderly	1
Diet kitchen police	1	Property attendant	1
Orderlies' room	3	General police	5
Stable police	1		
Ambulance driver	1	Total	22
Night watchman	1		

At the request of the military authorities of Pennsylvania, this company, Hospital Corps, took part in the mobilization of the National

[a] Not printed.

Guard of that State at Gettysburg, with results as set forth in a valuable report by Capt. F. P. Reynolds, assistant surgeon, United States Army, commanding the company.

During the year 337 men have been instructed in the company at Washington Barracks, of which number 283 were distributed chiefly to the Philippines, 4 were promoted while with the company to the grade of hospital steward and 33 to the grade of acting hospital steward, and 9 were detailed as lance acting hospital stewards.

Capt. John S. Kulp, assistant surgeon, U. S. Army, assumed command of the company of instruction, Hospital Corps, at Fort McDowell, Angel Island, Cal., March 19, 1902, and with his well-known energy has devoted himself to advancing its efficiency. It is regretted that the dearth of regular medical officers has been so great that thus far it has been found impracticable to assign another officer to assist Captain Kulp in his really arduous task. Nine hundred and sixty-one noncommissioned officers and men have passed through this organization during the year.

The company of instruction at Manila, which had attained a high degree of efficiency, was disbanded by order of the division commander August 13, 1901.

Uniform and equipment.—The uniform of the Army, including, of course, the Hospital Corps, was changed in General Orders, No. 81, Headquarters of the Army, Adjutant-General's Office, July 17, 1902. The changes made in the uniform of enlisted men of the Hospital Corps consist principally in the substitution of maroon for the emerald green heretofore prescribed for stripes, chevrons, etc., and of the caduceus in the place of the maltese cross, both for cap and collar ornaments and for chevrons. The modified maltese cross in green heretofore worn by privates on both sleeves is substituted by a caduceus in maroon silk, having a white border, to be worn on the dress coat and overcoat only. The overcoat is the same as for all enlisted men of the Army, viz, of olive drab wool material.

The equipment consists of fair-leather belt, shelter half, shelter poles, canteen complete, haversack complete, and tin cup for all enlisted men of the Hospital Corps. In addition to this, privates carry Hospital Corps pouch and litter sling.

The esprit de corps, which has never failed to actuate the members of this fine organization, which bears not only its full share of the hardships and dangers of the campaign and the battle, but the stress and dangers of epidemics as well, has lost nothing of its fervor during the last year. The following named have been especially commended since the date of last report:

Private Milton McCoy, Hospital Corps, was granted a certificate of merit in February, 1902.

The following-named members of the Hospital Corps have been recommended for certificates of merit during the past fiscal year:

Private Thomas Hamilton, for distinguished services in the attack on Tientsin, China, July 13, 1900, for succoring the wounded under a most severe fire of all arms.

Private David L. Van Arman, for the high order of courage and devotion to duty shown by him throughout the campaign against the insurgent mountain stronghold near La Paz, and especially during the fight on April 26, 1900.

Private Archie D. McMurdo, for rescuing a companion from drowning in the Potomac River at Washington Barracks, D. C., July 4, 1901.

Acting Hospital Steward Walter K. Barnes, for going forward to the firing line June 3, 1900, in an engagement with insurgents and rescuing Private Perry G. Ethridge, Company A, Twenty-second Infantry, having to pass over completely exposed ground and through an intense fire.

Private George Metzger, for distinguished services in the face of and in action with the enemy.

Private William H. Phelps, for distinguished services in action at Maincling, Luzon, on the night of July 4, 1900. Under a terrific fire he left the dressing station and went to the trenches to administer to the wounded.

Private Earl W. Kitchen, for conspicuous gallantry and devotion to duty in caring for his comrades when almost exhausted.

Private Jesse Rutledge, for gallant and meritorious services in rendering first aid to the wounded at Lubao, Luzon, October 29, 1899. Private Rutledge was shot immediately after contact was made with the insugents, but he continued to fight and render first aid for about 6 miles from Lubao.

Private Edward C. Knox, for faithful devotion to duty during an epidemic of smallpox at Bangar in July and August, he having contracted the disease at that time.

Private Louis Bertrand, for conspicuous gallantry and devotion to duty in caring for his comrades when almost exhausted and while under a heavy fire, June 19, 1899.

Private Julius Heinze, for bravery in action and meritorious conduct in attending to other wounded after he had been shot through both arms, and was severely cut across the back by native riflemen and bolomen, in Samar, and for distinguished services in the attack on Tientsin, July 13, 1900, in succoring the wounded under a a most severe fire of all arms.

Private Lewis Hansen, for volunteering and nursing two very severe cases of confluent smallpox.

Hosp. Steward Adolph K. Bernes was appointed second lieutenant, Philippine Scouts, in October, 1901.

Hosp. Steward Paul Weyrauch appointed second lieutenant of cavalry in May, 1902.

Private Jason M. Walling appointed second lieutenant, Nineteenth Infantry, in July, 1901.

Hosp. Steward Charles G. Sturtevant, having passed the preliminary examination, was ordered, in August, 1902, to appear before the board at Fort Leavenworth for examination for promotion to second lieutenant, U. S. Army.

Private Graham L. Milligan was admitted to the preliminary examination at Fort Columbus, N. Y., also Acting Hosp. Steward John E. Williams.

Private Norman E. Williamson was discharged in November, 1901, to accept a position in the government biological laboratory at Manila.

It is possible that not all are mentioned in this list that are entitled to be, as copies of reports of this character are not invariably furnished this office.

From the organization of the Hospital Corps, and especially during and since the Spanish-American war, the country is especially indebted to that splendid body of noncommissioned officers, the hospital stewards of the Army, whose intelligent devotion to duty under the most trying circumstances has contributed no little to whatever success has attended the accomplishment of the herculean tasks which have fallen to the Medical Department.

I take pleasure in bearing testimony to the invaluable work done by these devoted servants of the Government.

ARMY NURSE CORPS.

On June 30, 1901, there were in service 178 nurses. During the fiscal year 1902, 38 nurses were appointed and 97 discharged, leaving 119 in service at the end of the year. Sixteen of the discharges in Manila were granted at the request of the nurses themselves, who desired to accept civil positions there.

Of the 119 now in service, 63 are in the Philippines and 56 in the United States. Of those in the Philippines, 34 are on duty at the First Reserve hospital, 6 at Corregidor Island, 5 at Dagupan, 6 at Calamba, and the same number at Iloilo and transferred from Vigan. Of those in the United States, 39 are on duty at the general hospital, Presidio

of San Francisco, Cal., 9 at Fort Bayard, N. Mex., and 8 awaiting orders.

The desirability of a place in some army hospital in or near Washington where nurses could serve a probationary period is fully realized. The advantages of such an arrangement would be manifold. The superintendent would have an opportunity to personally observe each candidate before making recommendations for her permanent appointment, the examinations required by law could be made more thorough, and the risk of assigning unqualified or undesirable nurses to distant hospitals, involving a long and expensive journey, would be minimized.

The nurses seem to have made a place for themselves in army hospitals, and chief surgeons and commanding officers speak in high commendation of their services and conduct. One of the latter writes that "The nurses are entitled to the greatest praise and consideration."

MEDICAL AND HOSPITAL SUPPLIES.

The operations of the supply department have been continued in the same manner as submitted in the annual report for 1900–1901. Whenever surplus appeared in the depots in Porto Rico, Cuba, and the Philippines, owing to reduction in the military occupation of those islands, the stores were returned to the depots in the United States and applied to the ordinary issues.

A medical board was convened to revise the supply table of the Medical Department in order to give it the benefit of the experience gathered during the late war in the composition, allowance, methods of supply, and equipment. Those articles which require considerable time for manufacture, such as medical and surgical chests, and the medical equipment of field hospitals, with the exception of perishable articles, have been manufactured on the improved models, and there are now stored in the supply depot of the fireproof army museum building complete outfits for 160 regiments, in the supply depot at San Francisco the equipment of a division, and in New York that of a brigade. The perishable articles are omitted, but can be added in a few days in case of mobilization. In addition to this there is a large amount of medical equipment distributed at the military posts, sufficient for supply to respective garrisons.

The equipment of three modern field hospitals on the basis of the new supply table, 1902, is about being assembled, one to be issued to Fort Riley for trial during the autumn maneuvers, one to the San Francisco supply depot for possible emergency or use in the contemplated camp, and one at the medical supply depot in Washington for possible emergency.

It is proposed later on to assemble those of the imperishable parts of field hospital equipment which consume much time in manufacture, so as to have a number of field hospitals sufficient for any emergency for which the regimental equipments are in stock.

It is believed that the Medical Department is now better prepared than ever to meet any demands called for by sudden emergency.

RECRUITING.

The total number of men examined for enlistment during the year 1901 was 58,782, of whom 56,894 were white and 1,888 were colored. The number accepted was 36,721, or 624.70 out of every thousand

examined. The ratio of accepted men was 623.93 for the white and 647.78 for the colored. White men to the number of 86.67 and colored men to that of 69.38 per thousand declined enlistment. The rate of rejection on primary examination was 289.40 among the white and 282.84 among the colored candidates, giving a mean of 289.19.

Of every thousand examined 64.76 were rejected on account of imperfect physique, including overheight, underheight, overweight, and underweight; 41.14 for diseases of the eye; 38.74 for diseases of the circulatory system; 28.51 for diseases of the geneto-urinary system; 20.74 for venereal diseases; 19.96 for diseases of the digestive system; 13.00 for hernia, while 10.55 were rejected as generally unfit or undesirable; 6.80 were rejected as minors; 5.48 as unclassified; 5.12 for diseases of the integument and subcutaneous connective tissue; 4.27 for diseases of the muscles, bones, and joints; 3.10 on account of bad or doubtful character, while only 2.35 were rejected on account of illiteracy, imperfect knowledge of the English language, or mental insufficiency.

Of every thousand of the accepted men 884.97 were natives of the United States, 33.44 were born in Germany, 24.78 in Ireland, 12.50 in England, 10.81 in Canada, 5.28 in Sweden, 4.49 in Russia, 3.70 in Austria, the remainder in various other countries.

In addition to the foregoing, 29 Indians were examined, of whom 27 were enlisted as scouts and 2 for regular service.

IDENTIFICATION OF DESERTERS AND OTHER UNDESIRABLE MEN.

From July, 1890, the time of the first identification, to June 30, 1902, 2,827 cases have been reported to the Adjutant-General of the Army. In 29 of these cases the indentification was not verified because sufficient evidence could not be obtained or because the individual died, escaped, or deserted before his case could be investigated.

Of the 2,030 cases identified up to the end of 1900, 489 men were held to service, 990 were dishonorably discharged, 300 deserted, and 251 were reported for the information of the Adjutant-General, the men having gotten out of the service before the case was reported.

HEALTH OF THE ARMY.

The rates of admission to sick report for disease and injury, the rate of discharge for disability, and the mortality rate for the calendar year 1901 all agree in being considerably less than the corresponding rates of the year 1900. This shows the gradual improvement in the condition of the troops, notwithstanding the fact that many of them were subject to the exposures of the tropical service in the Division of the Philippines. That the rates continue to be higher than the average rates of the previous decade, 1890–1899, is to be expected, for during eight of those ten years the Army was on home service in time of profound peace, and, owing to the great attention paid to sanitary conditions, had lower rates than at any time in its previous history. A gradual approach to the lessened rates of the decade may be seen in each of the items of the record of morbidity. Thus, the admissions to sick report in 1901 constituted 1,791.59 per thousand of the strength as compared with 2,311.81 in 1900 and with 1,502.47, the mean annual rate of the previous ten years. The rate of discharge

for disability was 19.95 in 1901 as compared with 22.60 in 1900 and with 16.69 for the decade, and the death rate from all causes was 19.94 per thousand men as compared with 22.74 and 11.91, respectively. Deaths from disease constituted 9.58 per thousand of mean strength as compared with 15.79 in 1900 and with 8.49 during the years of the decade, and deaths from injury 4.36 as compared, respectively, with 6.95 and 3.42.

During the year the mean strength of the Army consisted of 92,491 men, of whom 81,885 were regulars and 10,606 volunteers.

The admission rate for troops serving in Porto Rico was 1,367.74 per thousand of strength, in the United States 1,550.25, in Cuba 1,557.49, and in the Pacific islands and China, 1,928.14. The death rate from all causes was 5.29 per thousand of strength in Cuba, 6.90 in the United States, 7.81 in Porto Rico, and 17.96 in the Pacific islands and China. Deaths from disease constituted only 3.21 per thousand in Cuba, 4.68 in the United States, and 12.40 in the Pacific islands and China. The mean strength of the commands were: In Porto Rico 1,153, in Cuba 5,297, in the United States 26,515, and in the Pacific islands and China 59,526.

At the beginning of the year the Division of the Philippines was made up of the departments of northern and southern Luzon, the Visayas, and Mindanao and Jolo. These departments were subdivided into districts, and the troops in Manila constituted a separate brigade. In July, 1901, the military designation of this separate brigade was changed to the Post of Manila, and it was made a part of the Department of Northern Luzon. In December, 1901, the departments of northern and southern Luzon were consolidated into the Department of North Philippines and the departments of the Visayas and Mindanao and Jolo into the Department of South Philippines. The districts had been abolished a month previous to this, brigades taking their place. Since then the organization has been: Department of North Philippines, headquarters, Manila, composed of four separate brigades, with headquarters at Dagupan, Pangasinan; San Fernando, Pampanga; Batangas, Batangas; Nueva Caceres, Camarines Sur, and Department of South Philippines, headquarters, Cebu, Cebu, with three brigades, headquarters, respectively, at Iloilo, Panay; Tacloban, Leyte, and Zamboanga, Mindanao.

During the fiscal year many changes have taken place also in the number of troops in the division and in the stations occupied. Both of these last have been greatly reduced. Regiments, too, have been greatly changed, nearly all those which arrived in 1899 having been transferred to the United States.

The character of service in the different parts of the archipelago has varied more during the year than in any similar period since American occupation. Although a great deal of hard field service has been done and much new country occupied, there has been a decrease in sick and mortality rates, for improved conditions in peaceful provinces have more than counterbalanced any local increase caused by arduous field service. Campaigns carried on during the year have not, however, been less trying to the stamina of troops than former ones; rather the reverse, as most of the more accessible points were already occupied by our forces at the beginning of the year and the necessity for following insurgents, hiding in the fastnesses of inaccessible mountains, added much to labors performed in the sweltering heat of the Tropics.

Col. C. L. Heizmann, assistant surgeon-general, U. S. Army, in an admirable report covering the period of his service as chief surgeon of the division, has given an interesting account of the medical and sanitary conditions affecting the troops and the civil population.

Prior to turning over the government to the civil authorities in July, 1901, a great deal had been done under military administration for the sanitary improvement of the Philippines. At that time the control of sanitary matters passed from a military board of health in Manila and from individual medical officers in the provinces, who acted in all stations as sanitary officers, to an insular board of health. This board was made up in great part of medical officers of the Army regularly detailed thereto under a member of the Commission. In provinces still under military control medical officers have acted as sanitary officers, as heretofore, and under their direction towns were cleaned, the inhabitants were vaccinated, venereal diseases controlled, contagious diseases isolated, and all necessary sanitary measures taken.

In Batangas especially, the policy of campaign pursued of gathering together inhabitants within certain zones into designated towns allowed such strict supervision by medical officers of the Army that the conditions under which the natives lived were better than ever before in the history of these islands. The natives were fed and clothed and compelled to observe sanitary laws; in consequence the death rates were much lower in the so-called reconcentration towns than in any other part of the archipelago.

Although the civil board of health as organized was intended to exercise general control of sanitary matters throughout the islands, their efforts were necessarily restricted to a great extent to the city of Manila. Provincial and municipal boards were organized, but neither a sufficiently intelligent personnel nor interest could be commanded to accomplish great results and outside of Manila, except in provinces under military control, sanitary conditions gradually grew worse until cholera appeared in March, 1902, when, at the request of the civil governor, medical officers of the Army were given practical control of sanitary matters outside of the city at all stations of troops and in towns adjacent thereto. This work was generally entered into with the greatest enthusiasm and effects were soon seen in improved conditions.

In the past stations for troops have been determined wholly by military necessity and it has not been possible to avoid unhealthy localities. Stations, too, have been in towns, where there have been any towns which could be occupied, both as towns were centers of insurgent activity and because of the shelter afforded, so necessary in a land of tropical sunshine and rain. Individual stations have varied greatly from a sanitary standpoint, the comparatively clean and well-built cities of Manila, Cebu, and Iloilo being infinitely better than the nipa villages in the country or temporary camps in unpacified provinces.

All native towns are insanitary in many respects, but as affecting the health of soldiers the miserable methods in use for the disposal of excreta and garbage by their native neighbors are most important, as in other respects troops can be safeguarded by their own officers by providing them with good food, water, etc. In the larger cities garbage is now regularly collected for cremation or removal to a safe distance for burial, but foul cess pits still exist, even in the city of Manila, where the few so-called sewers are no more than porous drains.

Other factors which render towns unsuitable for occupation by soldiers are the close intimacy into which they are thrown with natives, with consequent danger from contagious diseases, including venereal affections and those diseases resulting from drinking bad water and eating contaminated native foods, and the ease with which vino can be procured.

Structures occupied by troops as barracks vary greatly, but are nearly all convents or private houses, only a few barracks having been constructed. Of buildings not specially erected, convents are much the best, and in some towns are very satisfactory. The greater number of structures are not so, and are gradually growing worse, as no money can be spent on buildings not belonging to the Government. Nipa buildings are not regarded as sanitary; nipa roofs harbor vermin, and split bamboo floors can not be cleaned, retaining all filth except that which drops through to soil the ground beneath. The life of even a small nipa building is short, and when size is increased sufficiently for barracks stability is much decreased.

Tents should be used in this country only as the most temporary emergency shelter; they are very hot in the dry season and unpleasantly and injuriously light, and in the wet season do not keep out the rain, and become mud holes under foot unless floored. Canvas, too, rots rapidly, and conditions, bad enough when tents are new, are decidedly worse after they have been in use a short time. Always a costly shelter here on account of the poor lasting qualities of canvas the expense of using them is enormously increased.

Station hospitals have been established in the same class of buildings as barracks, but old dwelling houses, while not desirable for barracks, are naturally worse for hospitals. Specially constructed station hospitals will be needed as well as barracks as soon as permanent stations are established. The pavilion plan should be adopted for those where size warrants such method of construction.

Drainage is entirely natural in the great majority of stations. The larger towns have open drains, some built of stone or brick, but no general system has been followed, and the fall is usually insufficient. Even in Manila the connection of stable drains and overflow pipes from cess pits, with insufficient flush and fall, makes them very insanitary. There are practically no sewers in the islands, the pervious brick or tile-closed drains in the city of Manila hardly meriting the name. The drains empty into the moat, the Pasig River, on the bay shore, or in a blind extremity. Some of the barracks are connected with them. The odorless excavator is used with general satisfaction, although if cess pits are properly constructed without overflow, with water-closets attached, they require very frequent emptying. The Smith Crematory was tried at Hospital No. 3, Manila, but was a failure, not only was the odor almost unbearable in the closet building, but residents within a mile circle complained bitterly. Outside of Manila dry earth closets have proven satisfactory. Earth is often obtainable in small quantities only, but in those cases frequent cleansing has obviated that difficulty to a great extent. In Manila night soil is deposited at places designated by the board of health and at other stations is buried at a distance or thrown into streams or the sea.

This archipelago is one of the homes of foul water, the natives using the streams for drinking, washing of clothes and animals, bathing, and defecation. With very few exceptions no water should be drank

before sterilization. The conformation of the country makes it probable that artesian wells would be successful, which is to be earnestly hoped, as by any system of sterilization occasional accidents occur, while nature's methods are sure. A good artesian well is now furnishing water at San Fernando, Pampanga, and another at the cold-storage and refrigerating plant, Manila, supplies a good water, but not in great quantity.

Chemical sterilization of water has hardly been attempted, all purification methods depending upon heat applied in different ways. A great deal of distilled water is furnished by Medical Department ice plants and by distilling plants belonging to the Quartermaster's Department, much water is boiled, and a considerable amount obtained from Forbes-Waterhouse sterilizers. There is much difference of opinion as to the value of the last-named method of sterilization, and there can be no question that the first statements made as to the absolute safety of this process were premature, the operation of these sterilizers requiring intelligent supervision, without which simple boiling is preferable.

The greater number of water-borne diseases in soldiers are now contracted on active field service, when so much water is demanded by free sweating, induced by exertion, and the great thirst is generally assuaged with any obtainable water; nor is it easy to boil sufficient water; and water thus sterilized remains hot for so long a time that it is difficult to make men drink it, demanding the greatest watchfulness on the part of officers. In the young and inexperienced soldier there is too often found a spirit of bravado which prompts him to drink any water, with the idea that to take precautions denotes physical weakness.

The clothing supplied has generally been of good quality and fairly well adapted to the climate, although much of the khaki fades, and in consequence bodies of men look badly.

For field uniform the present campaign hat is the most satisfactory head gear yet devised. The light-weight flannel shirt is also excellent, but should be made of khaki color, both as leading to decreased visibility and because the lighter color would be cooler. Khaki trousers are also good, but should be made loose around the hips and tight at the ankles. The present shoes furnished by the Quartermaster's Department are of good quality, but another style of shoe is needed of the high hunting-shoe type with tongue sewed on both sides, so as to be practically waterproof. Into this shoe the trousers should be tucked, the tongue and lacing being adjusted over them. Such shoes would be much better than leggings, which on muddy roads do not protect the legs and feet. That these shoes are practically useful has been demonstrated many times, officers who have worn them being free from dhobie itch on the feet, while at the same time men wearing the present shoes and leggings were universally infected. The organism of dhobie itch is undoubtedly present in the mud, and in coming in contact with the almost unprotected feet of men is practically sure to set up the disease. The conditions of service is such that this shoe is required for cavalry as well as infantry. If drawers are provided, they should be loose and short, little more than trunks. The English do not use them in hot climates, and there is no uncleanliness in dispensing with them when the outer clothing is washable. The blouse is purposely omitted from this uniform. For station use clothing is

needed which by its color and light weight will minimize the effects of high temperature. The material for this might be white cotton, but the blue checked cotton which the Spaniards employed is rather better, in that it is nearly as cool and does not soil so readily. A cap of the present shape, with removable covers of the same material, is recommended. The present chambray shirt is good, and the present styles of blouse and trousers, but all should be made on the same model and not, as at present, with differences in the number of pockets, etc. The collar of the blouse would preferably be a low standing one fastened with two removable buttons, as are officers' blouses, sufficiently snug not to require a white collar; all buttons and buckles should be removable in order that the garment will not be stained by rush in washing. White canvas shoes would be an excellent foot gear.

The method of carrying ammunition in a belt around the waist is an injurious one, especially here, where so large a proportion of marching commands suffers from diarrheal diseases. The method adopted by so many soldiers of their own volition of wearing the belt over one shoulder is preferable.

The habits of the men may generally be considered as good, although long distance from home and family and national ties tends to encourage a certain recklessness in behavior and a loss of fear of consequences. The lack of rational amusement and the inability to give vent to the natural activity of young men in athletic pursuits also have a bad effect.

Except when engaged in actual campaigning the greater part of a soldier's duties are performed in the cooler morning and evening, leaving the middle of the day free, which is as it should be. The deadly monotony of unoccupied hours can only be realized by one who has passed a season in a small Filipino town. Some organizations are fortunate in having libraries of their own; a good deal of much appreciated literature has been supplied by a society in Manila devoted to that work, and baseball is played by a small number of men. A few troops, too, are in stations where hunting and fishing are practiced during certain seasons of the year, but even in the best situations a good deal of time is left idle. This is consumed in associating with natives, often of the lowest class, to the benefit of neither soldier nor native. By removal of stations from towns some benefit may be expected, as already stated, but in addition, rational amusement should be furnished. To accomplish this the reestablishment of the post exchange is recommended in this division, with a room or rooms devoted to games, books, papers, billiards, when practicable, and other amusements. For the success of this plan it is thought that beer and light wines should be sold at a moderate price in a separate room in the same building.

The food received has been generally good, and the Subsistence Department has widely extended around Manila the zone in which fresh meat and ice are supplied to troops. Remote stations in north Philippines and stations in the southern islands have not, however, been so fortunate, and in many of them the issue of fresh meat has been a rare occurrence. The Quartermaster's Department has recently secured a meat ship which will supply all coast stations and solve the problem for nearly all troops in the division.

Except for very few localities, all meat is now imported. This will have to continue for some years, as rinderpest has nearly destroyed the native cattle. In some posts the Medical Department has allowed

the Subsistence Department to attach refrigerating rooms to ice machines, and in this way fresh meat has been kept which otherwise could not have been preserved for issue. Vegetables have also been furnished generously by the Subsistence Department, and there has been a scarcity only in those posts which from inaccessibility it has been impracticable to reach except at long intervals. The supply of ice to troops by the Subsistence Department has conduced much to their comfort and should be continued.

Continued experience tends to disprove belief in the advantages to be derived from a reduced ration lessened in the amount of nitrogen and fats. In the theoretical discussion of this subject claims are made that as food in the Tropics is not required for the maintenance of bodily heat, it might with advantage be reduced, especially in those foods which are heat producing. Other theorists have gone even further, even to the point of contending that rice being the staple food of natives, should be adopted to the exclusion of all else by the white man dwelling in the Tropics. Heat production must go on in the tropical countries as in temperate climates; in fact, a certain amount of heat production is essential as long as life lasts. The balance is maintained not by decrease in food, but by increasing heat loss by the use of lighter-weight clothing.

The main factor on which the amount of food needed depends is work. That a soldier's work in the Tropics is less than in a temperate climate is not true. The results accomplished may be less, but tissue is used up with much more rapidity in a mean temperature of 85° F. than at 50° F., and an ample supply of good food is required to supply this waste, the effects of deprivation being shown immediately in reduced strength and health.

* * * * * * *

THE CONVALESCENT HOSPITAL, CORREGIDOR ISLAND, PHILIPPINE ISLANDS.

Corregidor Island lies across the entrance of Manila Bay, 27 miles from the city of Manila. The island is 3 miles long and from one-fourth to three-fourths of a mile wide. The greater part of it rises abruptly from the water, reaching an extreme elevation of 550 feet above the sea. Several plateaus of different sizes are formed on the higher points of the island. The hospital is situated on the shore of a small bay, on the north side of the island. It consists of four wooden pavilions elevated about 3 feet from the ground and with corrugated iron roofing. Sliding windows encircle the buildings and permit the wards to be thrown open, giving the most complete ventilation. Covered porches, 5 feet wide, extend round the buildings.

The administration building is a structure of two stories, 50 feet square, the lower story used as offices, the upper as a dormitory for the detachment of the Hospital Corps.

The kitchen, with three army ranges, and dining room are large and commodious buildings. The latter, accommodating 250 men, is the largest and most suitable building of the kind to any hospital in or near Manila.

The last-mentioned buildings are built on the general plans of the pavilions. All of the buildings are painted white, inside and out, with green trimmings, and present a very neat appearance.

Storerooms, operating rooms, and dispensary are in two adobe buildings constructed by the Spaniards. They were rekalsomined last January, and answer in every respect the purpose for which they are used.

An ice and distilling plant is in operation, located in a building just outside the hospital grounds and formerly used as a school building. The plant is in excellent condition, having run throughout the year without a single day's stop and has greatly added to the comfort and health of the patients.

The natural drainage is perfect. Open drains run throughout the grounds, carrying the surface water to the bay. All excreta, garbage, and débris of every kind are collected daily and carried in open boats out to the sea about half a mile from the shore and dumped. This work is done by four natives hired by the quartermaster department and are under the immediate charge of an acting hospital steward. By this method the grounds are kept thoroughly policed and in good sanitary condition.

Water is supplied by piping from a dam built in a water course about three-quarters of a mile from the hospital. The dam leaks, and during the dry season the supply becomes low. This fact may in the future lead to a serious deficiency unless a larger dam is built. The erection of a proposed distilling plant would solve the problem to a great extent. During the rainy season the supply of water is abundant. Drinking water is distilled at the ice plant.

The food is very satisfactory, though recently the scarcity and high price of chickens and eggs has embarrassed the diet kitchen. Owing to the character of the hospital—a place for convalescents—practically all of the patients are on special diet. This is carefully watched, well prepared, and thoroughly enjoyed. The appetite of nearly all patient, recovering from wasting disease is stimulated by the cool salt breezes, and in many cases voracious. The allowance of 40 cents is none too great; 50 cents a day could be easily used, with no wastage or extravagance.

As far as at present known, Corregidor Island is free from malaria, and such cases transferred here have done well. The water tanks, and all connections of water, however small, are covered with a layer of kerosene oil, and the few mosquitoes that would otherwise be presens have disappeared. The sea air; delightfully cool breezes, almost conl stant; sea bathing, bright, cheerful wards, good food, and the faithfu, performance of their duty by the medical officers, Army Nurse Corpst and Hospital Corps, have restored to health many cases of debility-apparently chronic these good results being obtained, as a rule, rapidly, with little medical treatment.

During the period July 1, 1901, to April 15, 1902, 1,039 cases were treated in this hospital. Of these, 658 were returned to duty, 292 cases were transferred to the United States, 25 were transferred to other hospitals, 9 died, and 55 remained under treatment. Most of the cases transferred to the United States were chronic cases of amebic dysentery for which a transfer to the United States appears to offer the only promise of recovery.

Respectfully submitted,

W. H. Forwood,
Surgeon-General U. S. Army.

Hon. Elihu Root,
Secretary of War.

REPORT OF THE PAYMASTER-GENERAL.

WAR DEPARTMENT,
PAYMASTER-GENERAL'S OFFICE,
Washington, September 18, 1902.

SIR: I have the honor to submit the following report of this office for the fiscal year ended June 30, 1902:

On July 1, 1901, officers of the Pay Department were charged with public funds aggregating	$7,740,087.92
During the fiscal year these officers received—	
From the United States Treasury	41,006,270.31
From soldiers' deposits	2,660,250.66
From army paymasters' collections	1,116,870.46
Total balances and receipts	52,523,479.35
Accounted for as follows:	
Expended on account of pay of the Army	39,452,537.46
Expended on account of pay of the Army, war with Spain (on Treasury certificates)	44,885.64
Expended on account of extra pay to Regular Army, war with Spain	25,645.28
Expended on account of extra pay to volunteers, war with Spain	78,335.30
Expended on account of mileage to officers	451,181.99
Expended on account of reimbursement to contract surgeons (on Treasury certificates)	10,905.91
Expended on account of pay of Military Academy	395,581.79
Expended on account of volunteers, Treasury certificates	297,555.00
Surplus funds deposited to credit of United States Treasurer	3,339,259.62
Army paymasters' collections deposited to credit of United States Treasurer	1,116,870.46
Balances charged officers June 30, 1902	7,310,720.90
Total	52,523,479.35

A comparison of the expenditures for the fiscal year 1902 with those of the fiscal year 1901, shows a decrease of $918,919. This amount is accounted for in part by the decrease in the pay of the Army, $775,840.43; also the decrease in the claims arising from extra pay to Regular Army, war with Spain, and decrease in amount of volunteers, Treasury certificates.

Number and amounts of deposits received from and repaid to soldiers on discharge from July 1, 1872, to June 30, 1901.

Fiscal year ending June 30—	Deposits received.		Deposits repaid.		
	Number.	Amount.	Number.	Principal.	Interest.
1873		$209,850.38			
1874		346,609.56			
1875		325,253.80			
1876		435,912.68			
1877	5,524	328,585.05	14,752	$1,041,001.57	$49,713.89
1878	5,524	346,243.94	3,182	145,667.91	8,420.24
1879	6,087	470,770.38	4,926	257,854.48	17,706.93
1880	8,635	477,174.44	8,084	392,568.93	30,680.97
1881	8,942	524,112.72	8,148	501,949.77	38,722.62
1882	6,890	448,561.83	7,570	428,482.44	31,658.73
1883	7,902	407,544.68	6,695	363,578.34	26,123.60
1884	7,114	389,267.55	8,184	404,291.57	31,124.93
1885	7,033	427,617.96	6,930	401,902.22	38,249.44
1886	7,261	469,031.55	7,835	490,506.79	46,583.23
1887	6,889	436,574.98	6,988	389,083.12	34,758.24
1888	7,409	386,944.10	6,346	323,952.97	29,327.01
1889	7,892	383,798.34	7,664	396,468.53	33,647.38
1890	7,634	395,128.82	7,206	411,039.74	41,596.60
1891	6,790	403,473.15	9,106	553,047.45	51,797.70

Number and amounts of deposits received from and repaid to soldiers on discharge from July 1, 1872, to June 30, 1901—Continued.

Fiscal year ending June 30—	Deposits received.		Deposits repaid.		
	Number.	Amount.	Number.	Principal.	Interest.
1892	5,570	$334,464.70	8,019	$410,873.15	$38,894.26
1893	5,870	282,248.04	5,317	268,835.46	26,059.07
1894	5,914	361,830.76	5,786	290,088.98	27,014.32
1895	6,284	318,270.73	5,880	308,372.45	28,766.42
1896	8,778	420,338.87	6,486	359,200.43	38,614.66
1897	17,878	535,392.64	6,976	345,559.55	34,850.53
1898	21,856	613,513.51	17,377	561,518.64	45,815.61
1899	37,842	1,496,762.31	28,508	988,774.63	61,273.95
1900	91,461	3,215,544.66	27,571	1,028,146.34	43,234.89
1901	111,004	3,438,529.11	78,948	2,955,169.39	114,750.37
1902	80,833	2,660,250.66	104,109	3,002,424.24	147,441.81
Total		21,289,603.90		17,020,359.09	1,116,827.40
Estimated amount remaining to credit of depositors		1,269,244.51			

NOTE.—Repayment of deposits to soldiers from July 1, 1872, to June 30, 1896, were not recorded by fiscal years. The repayments of 1877 include all deposits repaid prior thereto.

The above table gives a complete history of soldiers' deposits since the passage of the act authorizing them, May 15, 1872. As will be seen by reference to the table, the number and amount of the deposits varied comparatively little from the beginning of the system until the fiscal year of 1897 and the breaking out of the Spanish war.

The deposits reported as repaid for the fiscal year 1901 was an estimated amount. The actual repayments are now reported in above table.

The amount of deposits reported as repaid for the present fiscal year is again estimated, due to the fact that the May and June accounts from the Philippine Islands have only recently reached this office, and are not yet examined and analyzed.

ENABLING ACT.

A bill "to authorize the settlement of accounts of officers of the Army" (S. 5437, Fifty-seventh Congress, first session), which was approved by the Secretary of War in his letter of May 7, 1902, to the chairman of the Committee on Military Affairs of the Senate, failed of passage in that House of Congress, not through any opposition to it in committee, as I am informed, but because of the greater urgency of other legislative matters.

Induced by the importance of this subject to disbursing officers of the Army, I earnestly hope that the necessity for this legislation may be presented again to Congress in the early days of its second session. The reasons for the passage of S. 5437 having accompanied the Secretary's letter of May 7 last, it is not deemed necessary to repeat them here.

MILEAGE.

The mileage law, besides being just to the Government, has been found easy of execution, and is operating satisfactorily to the accounting officers, to paymasters, and to the Army at large. This law having fulfilled its purpose so well, no changes in it are deemed necessary.

A new table of distances has been published, governing the payment of mileage for journeys performed on or after July 1, 1902. The demand for this publication by all bureaus of the Government, as well as by outside parties, shows its value as well as the wisdom of the law making it the absolute authority in the determination of all distances and deductions.

Mileage disbursements for the fiscal year ending June 30, 1902.

	Certified claims.	January 1, 1899.	1899.	1900.	1901.	1902.
Inspection of the Army:						
By the General Commanding the Army, accompanied by his aids, and the generals commanding the several military departments, accompanied by officers of their staffs, as provided by paragraph 211, Army Regulations					$81.60	$4,775.79
By officers of the Adjutant-General's Department					261.14	1,294.94
By officers of the Inspector-General's Department					315.60	8,446.39
By officers of the Quartermaster-General's Department					293.12	7,421.69
By officers of the Commissary-General's Department					109.54	1,354.34
By officers of the Medical Department					651.36	3,487.42
By officers of the Paymaster-General's Department						1,002.12
By officers of the Ordnance Department					1,017.18	9,711.87
By officers of the Signal Corps					208.34	3,746.30
By officers of artillery (artillery inspection)					53.06	1,128.08
Inspection by line officers of—						
Troops					73.85	723.91
Horses					86.95	3,018.38
Buildings						79.24
Engineer and other property						117.22
Artillery districts—G. O. 81, 1901						1,278.01
Electric apparatus and fire-control						509.20
Old ordnance					7.14	52.52
Torpedoes, submarine defenses, and powder						63.56
Defenses in the Philippine Islands						123.00
Military reservations						3.36
Telephone and military telegraph lines						24.84
Cemeteries						73.18
Colleges						936.06
Land, roads, and bridges by Engineer officers					85.67	358.55
Inspection and instruction of the National Guard					31.78	19.74
Total for inspection of the Army					3,256.33	52,749.71
Change of station				$335.50	18,190.84	219,789.05
Travel of general officers and their aids, other than for inspection					72.52	6,678.36
Travel in Europe and other foreign countries					124.84	2,639.65
Recruiting duty				155.05	4,016.19	78,221.51
Courts-martial and courts of inquiry, to and from					985.99	11,494.53
Payment of troops					232.62	8,354.29
Officers of the line ordered to express offices to obtain money for payment of troops					6.30	269.41
Treasurer and professor Military Academy (Military Academy duty)					15.12	375.20
Instructions of Secretary of War (confidential duty)					190.69	3,657.94
Target practice and inspection of target ranges						201.65
Conducting prisoners, sick, and insane					11.14	1,152.40
Attending funerals of officers and other deceased officials						1,063.67
Line officers on business for Quartermaster and Commissary departments				8.05	292.85	2,462.73
Battery competitions, provisions of G. O. 36, A. G. O., 1901						751.15
Retiring boards and officers retired and ordered home					582.30	4,963.24
Boards of examination to examine officers for promotion				119.00	1,076.52	9,125.19
Boards of survey					1.80	269.73
Board on location of military sites, paragraph 26, S. O. 261, 1901						6,337.19
Boards on range finder						98.36
Boards on uniform						1,537.80
Boards on officers' schools, G. O. 15, 1901						105.92
Board on pneumatic gun						13.70
Board on Gathmann gun						506.26
Board on dynamite gun						14.83
Board on examination of gunners						271.08
Board on test of field artillery, S. O. 242, 1901					47.25	137.76
Board on organization and equipment of siege artillery						226.06
Board on mortar tests						329.78

Mileage disbursements for the fiscal year ending June 30, 1902—Continued.

	Certified claims.	January 1, 1899.	1899.	1900.	1901.	1902.
Board on ammunition, artillery district of Pensacola						$258.56
Board on purchase of land at Fort Andrews						65.50
Board on purchase of land at Fort Screven						2.52
Board on military site at Des Moines, Iowa						11.58
Board on military site at Fort Niagara						132.86
Board on site for military prison						18.04
Board on land at Fort Monroe						78.96
Board on locating buildings at Fort Casey						52.94
Board on fortification at Galveston Harbor						203.78
Board on harbor defenses at Pearl Harbor, H. I.						49.14
Board on automobile carriage						364.00
Board on brevet rank						304.83
Board on revision of manual of guard duty						91.42
Board on camp ground						74.03
Board to investigate accident in firing salute at Fort Trumbell						74.42
Board to investigate mining claim						258.96
Board to appraise sloop Esperanza						87.08
Witnessing payment of troops						7.00
Witnessing hanging of Filipinos						11.66
Business of Record and Pension Office						122.50
Topographical work						28.80
Consultation with department commander					$11.58	208.71
Army and Navy maneuvers						203.93
Memorial-day exercises						76.62
Instruction artillery at Indian Head						448.00
Mustering duty					3.50	9.38
War College						96.32
Attending coronation King Edward VII						268.17
Attending good-roads convention						121.48
Attending Buffalo Exposition						52.92
Marking Indian trail, Yellowstone Park						141.22
Investigating loss of gold by abrasion in Porto Rico						9.52
Investigating claims					2.16	16.24
Investigating Indian lease						4.48
Special investigations						14.84
Microscopical and bacteriological examination					4.90	22.54
Military information						29.00
Customs business					93.00	
Relief work in Porto Rico				$10.50		
Martinique expedition[a]						71.76
Certified claims	$36.72					
Treasury certificates (duty not shown)			$225.12	596.81	1,550.70	174.82
Orders fail to state special duty enjoined		$23.98		57.70	327.76	655.41
Total	36.72	23.98	225.12	1,282.70	31,016.80	419,105.07

[a] Refunded.

PERSONNEL.

Since July 1, 1901, the following changes in the personnel of the Pay Corps have occurred:

Maj. Hugh R. Belknap, paymaster, died November 12, 1901. Capt. Beecher B. Ray, paymaster, was promoted to major and paymaster November 12, 1901, vice Belknap, deceased.

Lieut. Col. Charles McClure, deputy paymaster-general, was retired from active service February 20, 1902, by operation of law. Maj. William H. Comegys, paymaster, was promoted to lieutenant-colonel and deputy paymaster-general February 20, 1902, vice McClure, retired. Capt. Herbert M. Lord, paymaster, was promoted to major and paymaster February 20, 1902, vice Comegys, promoted.

Maj. John P. Baker, paymaster, was retired from active service July 24, 1902, by operation of law. Capt. William B. Rochester, jr., paymaster, was promoted to major and paymaster July 24, 1902, vice Baker, retired.

The following captains of the line have been detailed as captains and paymasters under the act of February 2, 1901:

Capt. James McAndrew, United States infantry, July 6, 1901.

Capt. Guy Carleton, United States cavalry, October 15, 1901.

Capt. Charles E. Tayman, United States infantry, December 7, 1901, and detail revoked December 17, 1901.

Capt. Edmund Wittenmyer, United States infantry, December 17, 1901.

Capt. William F. Blauvelt, United States infantry, March 21, 1902.

Capt. Francis G. Irwin, United States cavalry, July 25, 1902.

Capt. Andre W. Brewster, United States infantry, was designated as acting paymaster United States Legation Guard, Pekin, China, vice Maj. E. B. Robertson, ordered to join his regiment in the Philippine Islands.

DISTRIBUTION OF OFFICERS AND GARRISONED POSTS.

On the 30th of June, 1901, there were 27 paymasters serving in the United States, 20 in the Philippine Islands, 3 in Cuba, 1 in Alaska, and 1 in Porto Rico; total disbursing officers, 52.

On the 30th of June, 1902, 32 were serving in the United States, paying a force increased by incoming troops from Cuba and the Philippine Islands; 16 in the Philippines, 3 en route to and from the Philippines, and 1 in Porto Rico.

The posts in the United States between January 1, 1901, and August 1, 1902, were increased from 118 to 142 and the number of arsenals decreased from 17 to 12. In the Philippine Islands between June 30, 1901, and February 2, 1902, the date of the latest returns received, the garrisons have been decreased from 490 to 320. Notwithstanding this decrease of 170 posts, it is found necessary to keep 16 paymasters in those islands to pay the still widely scattered garrisons, access to which is laborious and at times hazardous because of the bad condition of the roads, slow means of land transportation, and inadequate, tardy, irregular, and unsafe means of water transportation. Nevertheless, in this country and in the islands paymasters have acquitted themselves to the satisfaction of the Army.

CLERICAL FORCE.

The clerical force of this office is most efficient. During the year, in accordance with the act of Congress dated April 28, the temporary force of clerks, consisting of 35, has been transferred to the classified service. This force, supplemented by those paymasters' clerks not on duty with paymasters, is barely sufficient to keep the work of the office up to date, although it is thought that in the course of a few months it may be reduced by dropping two or three from the bottom of the efficiency list. I have no recommendation regarding the clerical force, except to renew that in regard to the establishment of a system by which clerks who are disabled and who have served not less than thirty years may be placed on a civil pension list. A scheme has been suggested which, it would seem, might work well and not increase the expense of the Government. That is that all clerks should have deducted from their pay a certain amount each month, thus forming a fund, held in trust by the United States Treasury, from which such

retired pay or pension could be paid. I see no trouble in adjusting such a scheme to a practical working basis if the principle be approved.

TRANSFERS BY CABLE.

Between the 26th of September, 1899 (the date of the institution of the method for supplying in part from moneys circulating in the islands the currency needed for the cash payment of troops), and the 28th of August, 1902, $12,490,818.04 in currency have been turned in to the chief paymaster at Manila by foreign banking institutions and others in the Philippines in exchange for New York checks, placed by this office, on cable notice, within twenty-four hours, to the credit of their agents in this country. This supply has of course modified the otherwise necessary withdrawals of a like amount of currency from use in the United States.

Since our occupation of the Philippine Islands, however, and to August 16, 1902, this department has sent out of the country to Manila by United States transports $25,024,550 in currency for payment of the troops, in denominations from 1 cent to $20; this in addition to the twelve million and odd dollars received and above mentioned. Of the amount transported, $10,380,500 was in gold, $13,220,000 in paper, and $1,424,050 in subsidiary coin. Shipments of gold ceased October 1, 1901, and paper in lieu of gold will always be sent unless the Treasury should happen to be unprovided.

DETAILS FROM THE LINE.

The present law detailing captains from the line for duty in the Pay Department works admirably. The only change that I would recommend in this connection would be that recommended by me in my annual report for 1901, that instead of the details being made from the captains of the line they be made from first lieutenants of the line, and the officers so detailed given the rank, pay, and allowances of captains, mounted, during their tour of service.

EXPENDITURES ON ACCOUNT OF THE WAR WITH SPAIN.

The following letter and tabulated report of expenditures by this Department on account of the war with Spain may be of interest:

AUGUST 22, 1902.

SIR: In response to circular letter dated War Department, August 16, 1902, I have the honor to herewith submit a statement showing all expenditures from appropriations under control of the Pay Department, U. S. Army, "on account of the war with Spain from March 9, 1898, to the date of the inauguration of the Government of Cuba, May 20, 1902, exclusive of expenditures on account of military operations in the Philippine Islands and the regular expenditures covering the support and maintenance of the Army within the borders of the United States that would have been made, ordinarily, had there been no war with Spain.

The total approximate cost of the war with Spain on account of pay and extra pay to volunteers and regulars and mileage to officers, as shown by the said statement, is $75,398,440.40.

Very respectfully,

A. E. BATES,
Paymaster-General, U. S. Army.

The honorable the ACTING SECRETARY OF WAR.

Statement of military expenditures by the Pay Department, U. S. Army, on account of war with Spain, from March 9, 1898, to May 20, 1902.

MILITARY ESTABLISHMENT.

[Pay, etc., of the Army and mileage to officers.]

Expenditures from March 9, 1898, to June 30, 1898	$6,563,732.36	
Expenditures from July 1, 1898, to June 30, 1899	68,560,859.99	
Expenditures from July 1, 1899, to June 30, 1900	36,552,812.29	
Expenditures from July 1, 1900, to June 30, 1901	39,838,227.13	
Expenditures from July 1, 1901, to May 20, 1902	35,918,043.37	
Total	187,433,675.14	
Less the total average cost of the Regular Army from March 9, 1898, to May 20, 1902, based upon expenditures for ten years prior to war with Spain	56,883,605.23	
Approximate pay and mileage		$130,550,069.91

EMERGENCY FUND, WAR DEPARTMENT, ACT OF JANUARY 5, 1899.

["To disband the Cuban army."]

Expenditures from May 27, 1899, to June 30, 1899	$905,100.00	
Expenditures from July 1, 1899, to June 30, 1900	1,639,650.00	
Approximate emergency fund		$2,544,750.00

NATIONAL DEFENSE.

[Mileage to officers and pay of contract surgeons.]

Expenditures from March 9, 1898, to June 30, 1898	$41,965.58	
Expenditures from July 1, 1898, to June 30, 1899	174,087.02	
Approximate national defense		216,052.60

MISCELLANEOUS.

Extra pay to Volunteers, war with Spain	$3,562,980.00	
Extra pay to Regular Army, war with Spain	661,539.00	
Pay, etc., of the Army, war with Spain	59,311.00	
Approximate miscellaneous		4,283,830.00
Grand total		137,594,702.51
Less the amount expended (pay and mileage) on account of military operations in Philippines, reported in S. Doc. 416		63,926,262.11
Approximate cost of war with Spain		73,668,440.40

PAYMENTS IN THE PHILIPPINE ISLANDS.

As a matter of general interest and for further reference, I insert herein a copy of report made to the honorable the Secretary of War, April 25, 1902:

SIR: In response to section 3, Senate resolution of April 17, 1902, calling for "a statement of the amount of money expended, and the amount, as far as * * * able to state the same, for which the Government of the United States is liable, remaining unpaid, for equipment, supplies, and military operations in the Philippine Islands each year from May 1, 1898, to the present time," I have the honor to report that the first detail of officers of the Pay Department left San Francisco, Cal., on June 27 and 29, 1898, respectively, for service in the Philippines, arriving at Manila on July 25 and 31. The first payments to the troops then on duty in those islands were made early in August, 1898, for the muster of June 30, and included pay from date of muster in to June 30. Since that date the troops there have been mustered and paid bimonthly.

The following summarized statement will show the total disbursements yearly from August 1, 1898, to include December 31, 1901 (the latest date covered by accounts received to the present time by officers of the Pay Department in the Philippines to troops there serving); also the total yearly disbursements for the same period at

San Francisco, Cal., on account of pay, mileage, travel allowances, repayment of soldiers' deposits and interest thereon, clothing pay and extra pay due officers and men (regulars and volunteers) en route for duty in the Philippines or returning therefrom for muster out and discharge. The statement will also show the (estimated) total disbursements on account of Philippine service for the period from January 1 to April 30, 1902, and, as nearly as can be ascertained, the estimated amount that will remain due and unpaid on account of such service to include April 30, 1902:

Summary of disbursements by Pay Department, United States Army, on account of Philippine service, from August 1, 1898, to include April 30, 1902.

Disbursed by paymasters in Philippines, August 1, 1898, to June 30, 1899, inclusive	$5,854,688.67	
Disbursed by paymasters at San Francisco, account Philippine service same period	1,800,836.71	
Total disbursements for fiscal year ended June 30, 1899		$7,655,524.38
Disbursed by paymasters in Philippines, July 1, 1899, to June 30, 1900, inclusive	14,654,429.03	
Disbursed by paymasters at San Francisco, account Philippine service same period	4,057,682.58	
Total disbursements for fiscal year ended June 30, 1900		18,712,111.61
Disbursed by paymasters in Philippines, July 1, 1900, to June 30, 1901, inclusive (exclusive of $542,792.03 paid to officers and men detached from the Philippines for service in China, September 2, 1900, to June 30, 1901)	$18,098,400.20	
Disbursed by paymasters at San Francisco, account Philippine service same period	6,223,761.47	
Total disbursements for fiscal year ended June 30, 1901		24,322,161.67
Disbursed by paymasters in Philippines, July 1, 1901, to December 31, 1901, inclusive (exclusive of $28,900.31 paid to officers and men detached from the Philippines for service as legation guard at Pekin, China, same period)	$7,245,309.57	
Disbursed by paymasters at San Francisco, account Philippine service same period	2,043,188.35	
Total disbursements from July 1 to December 31, 1901		9,288,497.92
Estimated disbursements by paymasters in Philippines, January 1, 1902, to April 30, 1902, inclusive	$4,830,206.38	
Estimated disbursements at San Francisco, account Philippine service same period	1,362,125.57	
Total estimated disbursements, January 1 to April 30, 1902		6,192,331.95
Aggregate disbursements August 1, 1898, to April 30, 1902		66,170,627.53
To this amount add, on account of pay, etc., due for two months on muster of April 30, 1902, in Philippines and remaining unpaid that date	$2,415,103.19	
And for pay, etc., for one month on account of Philippine service remaining unpaid at San Francisco on April 30, 1902	340,531.39	
		2,755,634.58
Aggregate cost (actual and estimated) of military operations in the Philippines, account of pay, etc., of officers and men, from May 1, 1898, to include April 30, 1902		68,926,262.11

It is proper to add in this connection that the total amount received on account of soldiers' deposits from enlisted men serving in the Philippines from August 1, 1898, to include December 31, 1901, was $6,908,176.

As a large proportion of said sum (probably $5,000,000, interest included) has already been repaid to volunteers and regulars who served in the Philippines and have since been mustered out or discharged, or will be discharged, and repaid prior to April 30, 1902, it is suggested that the sum of, say, $5,000,000 is properly deductible from the aggregate cost for Philippine service shown in the foregoing summary.

Very respectfully,

C. C. SNIFFEN,
Acting Paymaster-General, U. S. Army.

Since the above report was made an official report of the receipts and disbursements in the Philippine Islands for the entire fiscal year 1902 has been received and is herewith appended.

Statement of receipts and disbursements of Pay Department in the Division of the Philippines during the fiscal year 1902.

Balance on hand July 1, 1901:		
With assistant treasurers, United States	$1,086,123.53	
Cash	2,207,129.62	
		$3,293,253.15
Credits with assistant treasurers, United States		4,580,144.99
Currency and silver received:		
From the United States	4,300,000.00	
From Manila banks	5,090,000.00	
From insular disbursing officers	307,835.34	
		9,697,835.34
Soldiers' deposits received		1,938,241.76
Paymasters' collections received		505,284.97
Total receipts		20,014,760.21
Disbursements:		
Pay of the Army	14,025,668.16	
Mileage	42,571.58	
		14,068,239.74
Paymasters' collections deposited to credit Treasurer United States		504,913.02
Surplus appropriations deposited to credit Treasurer United States		993,622.49
Covered into Treasury (being balance with assistant treasurers in account with Maj. Hugh R. Belknap at his decease)		59,301.68
Transferred to paymasters outside of division		16,332.01
Balance on hand June 30, 1902:		
With assistant treasurers	$996,868.68	
In transit to assistant treasurers	41,802.22	
Cash	3,333,680.37	
		4,372,351.27
Total		20,014,760.21

The records show that the paymasters have issued checks in exchange for currency to officers and enlisted men during the fiscal year as follows:

Assistant treasurer United States, New York	$462,600.29
Assistant treasurer United States, San Francisco	561,992.11
Total	1,024,592.40

CHAS. H. WHIPPLE,
Lieutenant-Colonel and Deputy Paymaster-General,
Chief Paymaster, Division of the Philippines.

It is with satisfaction that I am enabled to state that while the total disbursements on account of pay, etc., of the Army, from April 21, 1898, to June 30, 1902 (a period of four years two months and ten days), aggregates $200,051,267, every cent has been satisfactorily accounted for and the Government has not lost one cent through defalcation, captures by the enemy, robbery, or any other cause; while the cost of disbursing this vast sum, including the salaries and mileage of paymasters and their clerks, has been but seven-tenths of 1 per cent of the amount disbursed.

When it is considered that very much of the service paid for has been remote from the United States, thereby increasing the cost of payment, it will be evident that had the troops been serving altogether in the United States, the cost of disbursement would in all probability have fallen to, or below, six-tenths of 1 per cent of the amount disbursed.

In this particular, contrasted with the civil war, when nearly a half million dollars was lost to the Government, the absence of any loss

whatever during the period covering the Spanish-American war and the Philippine insurrection is a gratifying tribute to the official probity, responsibility, and accountability of the officers of the Pay Corps.

Attention is invited to the exhibits which are appended, showing in detail the accounts with the several appropriations, fifty-two paymasters having disbursed $19,175,396.25 in the field, and $21,581,232.12 in office payments, a total of $40,756,628.37.

Very respectfully,

A. E. Bates,
Paymaster-General, U. S. Army.

The Secretary of War.

* * * * * * *

REPORT OF THE CHIEF SIGNAL OFFICER.

War Department, Signal Office,
Washington, October 1, 1902.

Sir: I have the honor to submit herewith my annual report covering operations of the Signal Corps of the Army for the fiscal year ending June 30, 1902.

For convenience of reference field operations of the Signal Corps are treated in this report geographically under the various headings of Alaska, Cuba, the Philippines, and the United States.

OPERATIONS IN ALASKA.

The act of Congress approved May 26, 1900, provided for an extensive system of military telegraph lines and cables in Alaska, to be constructed and operated by the Signal Corps of the Army.

The remoteness of the region, the shortness of the summers, and the extreme physical difficulties of transportation and line construction naturally rendered the completion of these lines impracticable in the fiscal year ending June 30, 1901. In consequence, the appropriations have been continued in force by Congress including the fiscal year ending June 30, 1903.

Capt. Frank Greene, Signal Corps, in charge of construction work, has been transferred from Alaska to the Philippines, being relieved by Maj. Joseph E. Maxfield as signal officer, Department of the Columbia, under War Department orders, dated February 11, 1902. The very serious illness of Major Maxfield, culminating during an inspection trip in Alaska, rendered it impossible for that officer to make an annual report. Moreover, as Captain Greene and First Lieut. O. B. Grimm, the only officers of the Signal Corps familiar with the work in the lower Yukon, are both serving in the Philippines, the general supervision of the Alaskan work, as well as the detailed preparation of the report thereon, has during the past months fallen on the Chief Signal Officer of the Army, the only one having familiarity with the conditions.

As originally planned, the Alaskan telegraph system simply brought the territorial military posts in communication with each other and with the commanding general of the department, then stationed at St. Michael, but did not afford means of telegraphic communication outside of the Territory of Alaska.

Through conference between the Canadian government at Toronto and the Chief Signal Officer of the Army cooperation in telegraphic work between the Alaskan and Canadian systems was established. The distinguished premier of Canada, Sir Wilfrid Laurier, in consenting to recommend favorable action on this cooperation to the Canadian parliament, expressed personally to the Chief Signal Officer of the Army his desire to further any plan which would bring the United States and Canada into closer and more cordial relations, especially in Northwest America. The Canadian parliament having made an appropriation therefor, its own system was extended from Ashcroft, on the Canadian Pacific Railway, to the international boundary line between Dawson and Fort Egbert.

As a result of this cooperative work the telegraph line between Dawson and Fort Egbert was completed on May 5, 1901, placing the American territory on the Upper Yukon in direct telegraphic communication with Skagway, whence by steamer telegrams could reach Washington under ordinary conditions in four days. On September 4, 1901, the Canadian line between Dawson and Ashcroft was completed, thus bringing the Upper Yukon region of the United States in direct telegraphic communication with Washington and the rest of the commercial world.

In the Department of Alaska Brig. Gen. George M. Randall, the commanding general, has shown not only an unusual official activity in the construction of lines during the period of his service at St. Michael, but his personal advice and interest, invaluable to the Signal Corps of the Army, have been maintained since the transfer of headquarters to the Department of the Columbia, Vancouver Barracks, Wash. The same spirit of helpfulness and assistance has been experienced at the hands of the officers of his staff and, with very rare exceptions, from the commanding officers of posts.

A preliminary reconnaissance of the route made by the Chief Signal Officer in person in 1900 was absolutely necessary, in view of the extremely conflicting opinions as to the possibility of constructing such a line, and as to the routes which must be followed to economically carry out the work. While such reconnaissance afforded invaluable knowledge to the Chief Signal Officer of the Army as to topographical features of line construction, it also confirmed his belief that such a line could be built and operated, despite the predictions of many persons of Alaskan experience that such work was impossible of execution.

It seemed to the Chief Signal Officer of the Army to be of primary importance that as many posts as possible should be speedily brought into intercommunication with each other and with adjoining telegraph stations. Thus practical results might be most speedily obtained, leaving the graver and more difficult parts of the problem for later solution.

Efforts were therefore directed, first, to connecting Fort Egbert (Eagle City) with Dawson; second, to connecting Fort Davis, near Nome City, Alaska, with Fort St. Michael and the headquarters of the commanding general of the department; third, to connect Fort Liscum (Valdes), Prince William Sound, with Fort Egbert (Eagle City), over what is popularly known as the all-American route to the Klondike; fourth, to connecting department headquarters at Fort St. Michael with Fort Gibbon at the mouth of the Tanana River; fifth,

to connecting the military post at Skagway with Juneau, the capital of Alaska; sixth, to connecting Fort Gibbon with Fort Egbert (Eagle City) either via Rampart, or, seventh, along the Tanana River by such route as developments might make advisable.

By the extraordinary energy and activity of officers and men of the Signal Corps, heartily seconded by the officers and men of the line in Alaska, the first six lines have been completed, leaving only the seventh for the coming fiscal year, as shown by the inclosed text map.

EGBERT SECTION.

There being available only a few skilled men of the Signal Corps, Capt. Charles S. Farnsworth, Seventh Infantry, pushed to a speedy and successful completion, by a detail from his command, the construction of the line from Fort Egbert (Eagle City) to the international boundary, where, on May 5, 1901, it was connected with the Canadian telegraph line to Dawson, as mentioned in the last annual report.

NOME SECTION.

The connection of Fort Davis, at Nome, with Fort St. Michael was originally contemplated to be by a direct cable, but consideration of the usual ice condition of Norton Sound, and in deference to the general consensus of opinion confirmed by a personal inspection of the *terrain* near Nome City, caused the Chief Signal Officer to believe that a cable thus laid could not survive the action of the polar pack along the coast of the open roadstead of Nome. In consequence it was decided to lay a cable between St. Michael and Safety Harbor, where the cable, laid in the middle of the channel, would be at least partly protected from the polar pack, and thence reach Fort Davis and Nome by a land line.

A first-class telegraph line, on iron poles, was constructed under the supervision of Maj. John T. Van Orsdale, Seventh Infantry, from Nome City, through Fort Davis, to Safety Harbor.

In laying the cable between St. Michael and Safety Harbor the Chief Signal Officer of the Army decided to follow the same lines of operation as is pursued by commercial cable companies, and consequently invited proposals looking to the laying of the cable under the usual conditions, whereby payment is only made after it shall have been in successful operation for thirty days.

The award was made to Mr. W. R. Brixey, but unfortunately the steamer *Orizaba*, engaged in laying the cable, was wrecked near St. Michael, Alaska, on September 17, 1900. The lateness of the season made it impossible to obtain outside help. Eventually the cable was salved and laid by the Alaska Commercial Company, and communication opened between Nome and St. Michael on October 17, 1900.

Captain Greene, the signal officer of the department at St. Michael, owing to various complications as to the condition and title of the cable thus laid, declined to receive it, and referred the matter to the Chief Signal Officer of the Army. Alaskan navigation being closed, many months' delay resulted, and in the meantime the cable was broken by the polar pack. The legality of title to the cable being established, the Chief Signal Officer directed the signal officer of the department to receive the cable, which had meanwhile been again restored by the contractor to working condition.

The cable was then formally received by the Government and was operated during the summer and autumn; it was again interrupted by the polar pack on November 24, 1901. It therefore seemed advisable to try other methods of communication.

The achievements of wireless telegraphy having been strongly advanced, recourse was had thereto in the hopes that one of the commercial systems might prove satisfactory. Proposals were invited, and on the recommendation of a board of signal officers the award was made to the lowest bidder, Queen & Co., who guaranteed to establish, in working order, between Nome and St. Michael, the Fessenden system by October 1, 1902. It became evident some weeks since that this contract could not be completed without extension of time, which the company has lately urged on the Signal Office.

As soon as delay in the wireless system became evident Gen. George M. Randall, commanding the Department of the Columbia, urgently requested that an attempt should be made to repair the Nome-St. Michael cable this autumn. The Chief Signal Officer of the Army found that the only possible chance of repairs in compliance with General Randall's request lay in sending Signal Corps experts by steamer leaving San Francisco September 10, 1902. First Lieut. Walter L. Clarke, with two skilled Signal Corps men relieved from duty with the maneuvers, left for Alaska on three hours' notice. However, it seems more than probable that the cable will not live in Norton Sound unless it is taken up and transferred considerably to the eastward, so as to run into Golovin Sound, which would require the extension of the land line some miles to the eastward. This may possibly be done in the summer of 1903, unless meanwhile a system of wireless telegraphy can be installed satisfactorily. While there is an uncertain outcome, yet this action is in keeping with the policy of meeting the demands of the line of the Army in grave emergencies.

YUKON SECTION.

This section of line extends from department headquarters, at Fort St. Michael, to Fort Gibbon, in the Yukon Valley. Crossing the St. Michael canal to the mainland, it was built via Golsovia and Unalaklik along the coast, thence across the Kaltag portage to Nulato, whence it follows the north bank of the Yukon River to the northeast to Fort Gibbon, at the mouth of the Tanana. At the end of the summer of 1901 222 miles of this line had been built, of which 138 miles were constructed under the officers and noncommissioned officers of the Signal Corps and 84 miles under the supervision of five officers of the line of the Army.

Notwithstanding the urgent orders of General Randall, the work done under the officers of the line progressed very slowly. These officers, however, labored under many disadvantages, not being technically trained in construction work, and being in addition loaded down with multifarious duties.

While the original estimates and plans looked to the construction of the line by working details from the line of the Army, supervised by expert linemen and electricians of the Signal Corps, yet modifications were plainly necessary or the whole project would fail. Signal Corps detachments were diverted from the Philippines as working parties, and the original assignment of two officers was increased to four, it

being necessary to send into an Alaskan winter officers just returned from prolonged service in the Tropics. These officers were Capt. Frank Greene, signal officer of the department, in charge, with station at Fort St. Michael; Capt. George C. Burnell, stationed at Valdes; First Lieut. O. B. Grimm, later relieved by First Lieut. George S. Gibbs, with station at Fort Gibbon, and First Lieut. William Mitchell, stationed at Fort Egbert. This action was most timely, as the change of garrisons consumed practically the summer of 1902.

Lieutenant Gibbs applied himself to the work of construction in the Lower Yukon with great energy, and his efforts were so well directed that the line was opened to Fort Gibbon on November 18, 1901. This placed in direct communication with each other Nome, St. Michael, and Fort Gibbon by combined land line and cable system of 408 miles in length. The importance and value of this connection may be estimated by the fact that the ordinary mail time between these two points is twenty-nine days.

VALDES SECTION.

The construction of a line between Fort Liscum, near Valdes, and Fort Egbert (Eagle City) was deemed most important, as it would bring Fort Liscum, the Prince William Sound region, and the rich Copper River Valley in communication with the outer world. Moreover, it followed the all-American route to the Klondike region, then being much exploited. The line, however, ran through a country of rapid rivers and tundra morasses without roads. While it has been made passable for pack trains by the well-directed energies of Maj. W. R. Abercrombie, acting engineer officer, Department of Columbia, who had opened up the trail to Chestochina, about 170 miles inland from Prince William Sound, the remainder of the distance from Chestochina to Fort Egbert, about 270 miles, was country where no improvement of the rarely traveled trail had been made, thus making transportation of material and supplies a work of almost inconceivable difficulty.

Captain Burnell set to work with a determination to surmount the almost insuperable obstacles which confronted him, and at the end of the last fiscal year 37 miles of line had been built. Taking advantage of the heavy winter snowfall, Captain Burnell put his party in the field in midwinter, on January 1, and sledded a large quantity of forage, subsistence stores, and line material over the frozen rivers and swamps, impassable in summer, breaking the trail into the interior through deep snow under very trying conditions. Drifting snow, low temperatures, and many open-water spaces in the rapids of Keystone Pass made the work most dangerous and delayed progress.

Meanwhile the autumn advanced with no signs of equally extended work in the Upper Yukon, whence the garrison at Fort Egbert (Eagle City) was expected to work southward toward Fort Liscum (Valdes). It was therefore deemed necessary to send First Lieut. William Mitchell, Signal Corps, into Alaska in midwinter, he crossing over the White Pass route by sledge to Dawson and thence to Fort Egbert, which place he reached on January 4, 1902.

The commanding officer at Fort Egbert had not deemed it advisable to commence transportation of the varied line material, subsistence, and quartermasters stores, so that Lieutenant Mitchell found himself handicapped by unexpectedly adverse conditions. General Randall,

however, placed under him by telegraphic order all available transportation and from the garrison as large a detail as was possible to assist him in his work, but shortly after most of the men of the line were necessarily relieved, owing to the change of stations then going on in Alaska.

With Captain Burnell working from the south and Lieutenant Mitchell from the north, they finally met near the Tanana Junction on August 24, 1902, when the connection was made and the line opened, thus bringing Valdes and the Prince William Sound country in telegraphic communication with the rest of the world. The line—about 420 miles in length—runs from Fort Liscum through Keystone Canyon to Copper River Valley, with stations at Copper Center and Chistochina, through Mantasta Pass, across the Tanana Valley to Kechumstock, near head waters of Forty-mile Creek; thence into Eagle City and Fort Egbert.

Of this line, about 260 miles were built by Captain Burnell, about 125 miles by First Lieut. William Mitchell, Signal Corps, and the balance of 35 miles by an officer from Fort Egbert. Judging from some 30 miles of Burnell's work, inspected by the Chief Signal Officer, the line is of remarkable solidity.

The toil and hardships experienced by these and all other working parties—enlisted men of the line, the Signal Corps and civilian employees—can not be fairly appreciated by anyone unfamiliar with Alaskan trails. Suffice it to say that every pound of food, forage, tentage, etc., wire, insulators, or line material has to be moved by pack animals over a trail so rough that an animal can hardly travel 15 miles a day. Cold and rapid glacial streams, swampy morasses, tangled underbrush, steep declivities, narrow canyons, thick timber, and sharp ridges alternate to tax the strength of man and animal to the utmost. The monotony of the life is exceedingly trying after the novelty of scenery disappears. Rarely is any large game or even bird life seen, and humanity, whether in the shape of prospector or Indian, appears infrequently and morosely. When to these conditions are added the physical discomforts attendant on frequent falls of rain in summer and of snow in winter, with high, cutting winds, it requires firmness of purpose to persevere to the end. Certain it is that no body of men in Alaska render more faithful and valuable service to the country than do the enlisted men of the Army, especially on the telegraph trails.

RAMPART SECTION.

This line, built along the Yukon from Fort Gibbon to Rampart City, was constructed with a view of reaching Fort Egbert by a direct route across country to Circle City, and thence follow the river. Captain Greene was unremitting in his efforts to find a practicable route, adhering to the opinion that it was the most direct, and, indeed, the only practicable way. The outcome was so unsatisfactory that the Chief Signal Officer stopped the line at Rampart City, and adopted the Tanana route.

It required no less than four exploring expeditions, covering a period of nearly two years, to find a route between Rampart City and Circle City which could even be traveled by an exploring party, let alone building a telegraph line.

The line from Fort Gibbon to Rampart City was completed in January, 1902, by Lieut. George S. Gibbs. The adverse conditions of cli-

mate and circumstances attending this construction were such that special credit is due Lieutenant Gibbs and his party for the completion of this section in the Alaskan winter.

JUNEAU SECTION.

The location of a military post at Skagway, contiguous to the ill defined boundary line between Alaska and Canada, made it of primary importance that there should be telegraphic communication with Juneau, the capital of Alaska, and with the Federal officials at that point. It seemed best to make this connection by cable instead of land line.

The award for the construction and laying of a submarine cable between Juneau and Skagway, Alaska, was made to Mr. W. R. Brixey, under the usual conditions of no payment until the cable had been operated successfully for thirty days. The cable installed on August 23, 1901, was interrupted after working a few days. Diligent efforts were made by the contractor to restore communication, which were unsuccessful last year owing to the lateness of the season and the prevalence of inclement weather. The cable was, however, placed in good working order and opened to business on June 9, 1902. Ignoring the military value of this cable, its commercial importance to southeastern Alaska is apparent from the fact that the combined governmental and commercial tariffs for June, 1902, exceeded $500.

TANANA SECTION.

This section is yet under construction, and such steps have been taken as will, it is hoped, secure its completion before the end of the present fiscal year.

The difficulties attendant on the connection of the Egbert-Liscum line with the Gibbon-St. Michael line have demanded the serious attention of this office for the past two years. There were three routes under consideration, the first via the Yukon Flats, the second via the Tanana Valley, and the third from Rampart City via Beaver Creek to Circle City, and thence to Fort Egbert.

In a letter dated November 21, 1901, and received at the Signal Office February 10, 1902, Capt. Frank Greene said:

> The route via the Yukon Flats is not to be thought of except as a last resort. The solid land is as far from reach of steamboats as the overland route. The route via the Tanana is as bad as the Yukon. There is a prospect of reaching Circle City by the route I have indicated (via Beaver Creek), and thence Fort Egbert.

Captain Greene's opinion was expressed after the failure of two Signal Corps expeditions to pass across the country from Rampart City to Circle City, and while a third was in the field.

In a letter of November 27, 1901, received at the Signal Office March 28, 1902, Captain Greene in forwarding a report of Lieutenant Dichmann, of the Seventh Infantry, on the Tanana route said:

> It agrees with the former reports of the marshy nature of all the country between the Tanana and the divide which separates its northern watershed from the Yukon River. I do not think the Tanana route feasible, nor do I intend to attempt it.

Meanwhile the Chief Signal Officer of the Army, feeling that further delay would be most prejudicial to the public interests, personally took up the subject, carefully supplementing his personal knowledge of Alaska by all sources of information available in Washington. As

a result, he concluded that the Tanana Valley afforded the only route over which a telegraph line could be constructed and maintained, and on February 7, 1902, issued telegraphic instructions accordingly.

The Yukon route was plainly impracticable, not only on account of its great length, but from the character of the Yukon Flats, where, new channels continually forming, the river is in places from 30 to 40 miles wide, so that repairs and maintenance would be practically impossible.

The Rampart-Beaver-Circle City route presented insuperable conditions as regards transportation. The exploring parties in this country barely escaped great privations for themselves and loss of their animals, so that the transportation through this rugged region of many tons of telegraph-line material, together with the necessary food subsistence for construction party and forage for animals, was clearly impossible.

On the other hand, the Tanana route presented the obvious advantages of easy transportation in summer by boat as far at least as Bates Rapids. Orders were therefore given to construct the line by this route as far as Bates Rapids and thence across by Delta River should Captain Burnell find that route to be practicable. Later examinations of the upper Tanana disclosed the fact that it was easier to avoid Delta River and build from Bates Rapid along the northern bank to Tanana Junction on the Egbert-Liscum line. Operations were therefore initiated along the Tanana River and their outcome has fully confirmed the soundness of the decision.

First Lieut. George S. Gibbs began work in February, 1902, and has prosecuted it with such judgment and energy that at last advice no less than 100 miles of permanent line had been constructed, while wire for a temporary line had been extended 150 miles beyond.

Arrangements have been made for the distribution of supplies and material this autumn at suitable points from the Tanana as far as the head of Bates Rapids. The work is being coordinated and pushed under the supervision of Capt. George C. Burnell. It is expected that Lieut. George S. Gibbs, working from Fort Gibbon, and Lieut. William Mitchell, operating from Fort Egbert, will keep the field all winter unless extremely unfavorable weather is experienced. Unless the conditions prove exceedingly adverse, temporary communication should be opened in early April, and the entire system be permanently completed by the middle of June, 1903.

The following table shows the amount of work completed on August 24, 1902:

Sections built.	Distance.
	Miles.
Nome to Fort Davis and Port Safety	24
Cable, Port Safety to Fort St. Michael	153
St. Michael to Fort Gibbon	251
Fort Gibbon to Rampart City	61
Fort Egbert to international boundary	11
Fort Liscum (Valdez) to Fort Egbert (Eagle City)	120
Cable, Juneau to Skagway military post	121
Fort Gibbon up Tanana Valley	100
Total	1,121

The connection of the new post at Haines Mission with Skagway by either cable or land line should be made in the spring of 1903.

The accompanying reduced map shows the general Alaskan system, and its connection with the lines of the Canadian government and of the White Pass Railway. The work accomplished has far exceeded the most sanguine expectations of the Chief Signal Officer of the Army. There have been actually built and put in working order in Alaska 1,121 miles of land lines and submarine cables within a period of twenty-four months.

The accomplishment of such results would be most creditable to officers and men concerned therein if Alaska was an ordinary country, for this work included not only surveying, construction, and installation of this length of line, but also involved the manufacture and inspection of enormous quantities of material, instruments, etc., many hundred tons in weight, and their transportation over distances ranging from 4,000 to 7,000 miles.

When one considers, however, the exceedingly difficult physical conditions within the Territory, the work must be considered simply phenomenal. In all parts of Alaska traversed by this great length of line there are not a dozen miles of wagon road. The region through the Tanana Valley, where hundreds of miles of wire have been laid, is marked upon most charts as an unexplored region, and there was in existence until reconnoissances were made by Signal Corps officers no accurate map of the valley. In line building all transportation, apart from the Yukon River, has been by pack animals. On the Valdes section all the wire, insulators, nails, etc., have been carried on mules' backs, some of it a distance of 100 miles and great quantities distances of 50 miles or more.

It has fallen to the lot of the Chief Signal Officer of the Army in his official career to be charged with duties more or less arduous in character, but there has been none which in the extent and scope of its difficulties has exceeded those connected with the construction of this great system of public works in the wilds of Alaska.

The labors and hardships of officers and men can never be duly appreciated save by those having personally known the conditions of Alaskan trails, and the work in question does not appeal to the public imagination as has that of China, Cuba, and the Philippines. Timber is locally abundant, but everything else has to be supplied—food, shelter, and human society. One officer forcibly writes that what appalled him was the enormous distances from one handful of humanity to another in the valley of the Yukon.

It may be added that the Signal Corps is applying to the difficult task of telegraph maintenance and operation in Alaska the most improved devices in way of instruments and equipment. As representative of this equipment a combined buzzer and telegraph set, shown by the inclosed photograph, has been devised by Capt. Edgar Russel, Signal Corps. With this instrument, unless the wire is actually broken, messages can be transmitted despite electrical leakages caused by imperfect grounds.

CUBA.

The operations of the Signal Corps of the Army in Cuba terminated with the evacuation of the island on May 20, 1902. The Signal Corps duties, including the operation of the entire telegraphic system of the island, were supervised during the fiscal year by Capt. Otto A. Nesmith. The great increase in commercial business testifies to the growing utility of the entire system.

There were comparatively short extensions—230 miles—of the telegraphic lines during the last year, yet the labor of repair and maintenance was very considerable. The new lines constructed were as follows: Caibarien-Yaguajay, 11 miles; Palmarita and Mayari, 40 miles; Santiago City, 40 miles, and Guantanamo toward Sagua de Tanamo, 102 miles. A submarine cable 16 miles in length was laid between Caibarien and Cayo Frances with a connecting land line of 6¾ miles.

For artillery rifle range practice temporary lines are built at Columbia Barracks and land lines between Vedado and Santa Clara.

Through Captain Nesmith's vigilance, efforts on the part of private parties or corporations to establish telephone lines unauthorized by law was prevented, thus subserving the rights of the Government of Cuba, in which, by law, all telegraphic and telephonic rights are vested.

In formulating regulations regarding private lines, a proper discrimination was exercised toward parties operating private telephone lines from which no revenue was derived, and for which informal authority had been previously granted by Spanish officials for their construction and operation.

The efficient character of the work done by the Signal Corps in the construction of the Cuban telegraphic system is illustrated by practically uninterrupted telegraphic transmission throughout the year. Despite the unfavorable climatic conditions and topographical difficulties, there was but one occasion during the year, for a period of five hours only, when the wires between Habana and Santiago were completely interrupted. This occurred during the violent hurricane of September 13 to 14.

The volume of commercial business increased to such an extent that additional wires were necessarily strung on many miles of poles during the year. In order to avoid further expense in this direction a most satisfactory test of duplex instruments was made during March, 1902, and contrary to the pessimistic views of many operators the instruments worked with great success. Steps were promptly taken to duplex the entire line between Habana and Santiago, but owing to unexpected delays, the installation had not been perfected when the transfer of the lines to the Cuban Government took place.

Cordial relations continued between the Signal Corps and the various commercial cable companies operating on the island, although, under instructions from superior authority, it became necessary to decline to accept from, or tender to, the French Cable Company any message to or from any point in the United States, Europe, or beyond. The International Ocean Telegraph Company continued its courteous cooperation in the time service, transmitting regularly for the Signal Corps time signals from the Naval Observatory in Washington at 12 noon of each day, in connection with which was operated the time ball by the captain of the port. Time was furnished with such accuracy and regularity to the U. S. *Eagle* and the U. S. *Yankton* as to facilitate their surveys and elicit complimentary acknowledgement.

The policy of substituting Cuban for foreign employees was steadily pursued during the year, so that on April 30, 1902, but 18 per cent was foreign against 82 per cent Cuban.

One of the most important of minor improvements was the establishment of free delivery of messages, the messengers having been accustomed from time immemorial to exact a fee for delivery.

There were handled during the first nine months of the fiscal year 206,294 commercial and 121,226 official messages, which for an entire year would make proportionately about 440,000. As compared with the previous year, it is worthy of remark that there was an increase of over 20 per cent in commercial messages as against 1 per cent in official messages.

The receipts for commercial messages during the ten months ending April 30, 1902, amounted to $80,436.63, as against $64,755.11 for the same period of the previous year, an increase of 25 per cent. The value of official business at the regular tariff rates amounted to $95,151.53.

Captain Nesmith says:

These figures, however, do not show the entire financial benefit that had occurred to the Government by the maintenance of its line, since had it not been practicable to transact this business over the Government lines, and had it been necessary to send it over the lines of the local cable companies, the cost of the official business alone would have amounted to $300,158.05, estimated at regular cable rates. A remarkable showing, particularly when it is understood there was no increase in mileage of the lines, and that actual increase in receipts was almost as great as that attained during the previous year, when the limit of advancement in commercial business was supposed to have been reached, and demonstrates the truth of the statements made in the last annual report of the Chief Signal Officer as to the continued and increasing confidence and appreciation of the services in commercial and business circles.

An interesting phase of the financial question, and one that affords a practical demonstration of the thoroughness and the efficiency of the system of auditing and accounting introduced by the service, is also found in the fact that of the total amount of line receipts, necessarily handled by many employees, there was no loss whatever to the Government or to the connecting cable lines, while there was a surplus of $295.63 in cash turned over to the Cuban Government at the time of the transfer, which had accumulated during the period of military occupation for unused prepaid replies, etc., pertaining to other line business.

The following text map shows the telegraph lines extant on the occupation of the island, which were all so dilapidated as to necessitate reconstruction, and also the existing lines, all in first-class condition, when the telegraphic system was turned over to the Cuban Government. They illustrate more forcibly than words the extent of Signal Corps work during the occupation, and the import and prospective utility of the system to Cuba, both Government and people.

Captain Nesmith says:

RÉSUMÉ OF SIGNAL CORPS WORK IN CONNECTION WITH GOVERNMENT TELEGRAPH LINES IN CUBA.

It seems not out of place that there should appear in this, the final report of the chief signal officer, Department of Cuba, a brief statement of the work accomplished by the Signal Corps in connection with the Government telegraph and telephone lines. The official report of each year having treated in detail of the work as it progressed, no attempt is made in this statement to more than draw an outline or to give in the most concise manner a bare summary. To appreciate, however, the difficulties of the undertaking and the full value of what was accomplished, the conditions existing at the time of occupation and methods in vogue under the Spanish régime must be considered.

Under the Spanish Government the postal and telegraph services of the island constitute a bureau known as cuerpo de communicaciones in the department of public works, and the first and a difficult task was to arrange for the separation of the telegraph from the postal service, which was accomplished by the complete reorganization of both branches into entirely distinct and independent services after the plan of similar organizations in the United States.

The telegraph lines of the island were found to be in a most deplorable condition, having been completely destroyed in most of the provinces, or so much out of repair

as to render them practically useless and to necessitate their reconstruction, so that on January 1, 1899, the Signal Corps came into possession of a broken and dilapidated system of telegraph lines confined to the western portion of the island, generally following the railroads, in many places the Government wires being placed on the poles belonging to the railroads, while there was no means of communication between Habana and the eastern portion of the island except that of the slow and irregular mail service.

The few lines working when the Signal Corps took possession were, in addition to their dilapidated condition, operated under the old open circuit and tape system, which was abandoned in the United States in the early days of telegraphy, the messages being handled, or relayed, at frequent intervals, the feat of through transmission between Habana and Santiago, or anything beyond very short distances, never having been accomplished, while the wires were often useless for thirty hours or more, and for all points east of Sancti Spiritus (which could be reached only under favorable conditions) messages had to be sent over the commercial submarine cable line at rates varying from 15 cents to 30 cents a word, according to distance. Moreover, the Continental instead of the American Morse was used, while the general manner of operating and methods of business recently in force were at a total variance with those to which the service had been accustomed.

And in this connection it is interesting to note the peculiar system in vogue, one that might be termed discouragement of the use of telegraph lines by those engaged in business and the people in general, for, contrary to the policy of the commercial telegraph companies, where the additional word rate is always less than that charged on the first ten words, the Spanish rates were as follows:

Telegrams of from 1 to 10 words, including address and signature, 20 cents, and 5 cents more for each word exceeding those mentioned above, regardless of the number of words the message may contain. So that for a 10-word message the rate was 2 cents per word; for a 15-word message, $2\frac{2}{3}$ cents per word; for a 20-word message, 4 cents per word, and so on in increasing ratio, a policy which must have operated strongly against the liberal patronage of the Government wires, and confined their use to cases of absolute necessity.

On December 30, 1898, a general order having been issued by the commanding general of the Division of Cuba placing the maintenance and operation of all telegraph and telephone lines recently the property of the Spanish Government, and the construction and operation of necessary new lines, under the control of the Chief Signal Officer, January 1, 1899, found the Signal Corps in possession of the dilapidated and almost useless system already described and charged with the duty of its improvement and extension in accordance with the new conditions existing.

The first duty of the Signal Corps was, however, to furnish means of rapid communication between the commanding general and the various posts throughout the island, which to some extent had been already begun and anticipated by the building of local telegraph and telephone lines in connection with department headquarters, posts, and encampments in various parts of the island. This necessitated the immediate extension of the telegraph systems and construction of entirely new telegraph and telephone systems, with the view of placing all camps, garrisons, and important cities in electrical communication with headquarters at Habana.

Material necessary for the construction of 500 miles of telegraph line and 5,000 poles had been collected at the Signal Corps supply depot established at Savannah, Ga., in November, 1898, in anticipation of the military occupation of Cuba; and having these supplies ready and near at hand the work was begun at once and pushed with such energy that by April 1 the overland trunk line between Habana and Santiago was completed, and on that date the Secretary of War, who was in Santiago, sent the first message over the line to the President of the United States. It ran as follows:

"The telegraph line constructed by the Government between Habana and this place has been this day opened for business, thus giving better facilities for communication between Washington and Santiago than heretofore. I know you will join in congratulations to the officers who have superintended the construction and to General Wood, who is nearer communication with the outside world than ever before."

The Chief Signal Officer of the Army, then inspecting the work of the Signal Corps in Cuba, cabled from Habana to the War Department on the same day:

"The overland telegraph line to Santiago completed at 10.30 this morning. The system of military telegraph lines is practically completed, there now being in operation nine lines crossing the island from north to south and one trunk line running through the center of the island from Pinar del Rio, at the extreme western end, through Habana and Santiago to Baracoa, at the extreme eastern end. General Brooke can now reach, over his own lines, every military command and every town of importance in Cuba."

And the Inspector-General of the Army, who was also on the ground, referred to the work of the Signal Corps in the islands of Cuba and Porto Rico as follows:

"The good work of the Signal Corps in the two islands is everywhere in evidence, and the completion of the overland telegraph line from Pinar del Rio to Santiago de Cuba and on to Baracoa will materially expedite government business."

All posts and camps telegraphically connected and the main line from Habana to Santiago in operation, other improvements were completed as rapidly as possible, so that on June 3 the Signal Corps was operating 2,500 miles of telegraph lines, of which over 600 miles was absolutely new and much of the balance reconstructed.

While this work, owing to the necessary haste and difficulties of construction, such as lack of transportation facilities, the uninhabited, mountainous, and forest countries, traversed by numerous streams and rivers, was not of the best and in many instances not of a permanent character, and which required subsequent reconstruction, still it answered its purpose and reflected credit on those who had accomplished it. The work thus far had been generally done by the Volunteer Signal Corps, men who had been selected on account of their telegraphic and electrical knowledge and experience, and the muster-out of the enlisted force during April and May caused, therefore, considerable embarrassment, scarcely 5 per cent of the volunteers being willing to reenlist or to remain on the island. This rendered it necessary to secure the services of civilian operators, and these soon took advantage of the situation to threaten a strike unless wages were increased beyond a figure possible for the Government to grant, and a cessation of operations was narrowly averted by the enlistment of a force of operators into the Signal Corps of the Regular Army sufficient to place the system on a firm basis.

As it was the intention of the Government, however, to place the telegraph lines of Cuba upon a permanent basis and similar to the great telegraph systems of the United States, upon which their maintenance and operation could be continued by the new government, as the enlisted force was withdrawn their places were filled by civilians, and when practicable by Cubans, and during the years of military occupation this end has been constantly kept in view, the policy of the system having been to so conduct its business that, while the official business of the Government was in no way impeded, the general public should be also benefited, and the people, to whom the best possible service was given, for which there was a moderate charge, be encouraged in the use of its wires.

Lines were, therefore, improved and extended and offices opened and maintained, not only where the amount of business warranted, but also where general commercial benefit and public interests demanded, while the system of free delivery of messages, maintained in all of the large cities and extended in the city of Habana to the distant suburbs of Vedado, Cerro, and Jesus del Monte stimulated business and brought good returns.

Old lines were reconstructed and new lines built in the best manner that circumstances would permit and equipped with improved modern appliances, automatic repeaters and duplex instruments replacing the cumbersome and unsatisfactory open circuit tape register system. Business has been dispatched with a regularity and promptness formerly unknown and in striking contrast to the delays of hours, and even of days, of common occurrence under the old régime, while approved methods of auditing and accounting were introduced under which all moneys received from commercial business have been promptly covered into the treasury.

Improvements continued until at the time of transfer a stable and permanent system had been constructed, the length of the telegraph wires in operation on the island amounting to nearly 3,500 miles, extending from San Juan y Martinez on the western end of the island to Cape Maysi on the extreme eastern end, with every point or seaport of business importance on the island electrically connected; the map which accompanies this report and forms Appendix "A" shows the lines constructed by the Signal Service and in operation May 20, 1902, while the inset map shows the old Spanish lines standing, though dilapidated and subsequently reconstructed by the Signal Corps, at the time of military occupation, January 1, 1899), while in addition to the telegraph lines important telephone systems of many miles in extent were constructed and maintained where necessary for the proper transaction of public business, the government cables were repaired and renewed and kept in operation, and new cables, of which the cable from Caibarien to the Cayo Frances was the most important, laid as the best interests of the island required.

As to the offices and business, Captain Nesmith continues:

On May 20, 1902, there were 99 offices in operation and open for business, while the employees numbered 316, of whom 144 were operators (ranging from 18 at Habana to 1 at the smallest stations), 41 were messengers, and 109 were occupied in the

work of maintaining and repairing the lines, and of these employees 82 per cent were Cubans.

That some idea may be formed of the growth and extent of the business created and built up by the Signal Corps, we have but to consider the results. Thus at the end of the first six months, June 30, 1899, during which construction work had occupied so much time and attention, the commercial income amounted to $9,746.90 and the official business was valued, reckoned at the regular tariff rates, at $84,966.73, and at the end of the first fiscal year, June 30, 1900, the commercial business amounted to $57,712.13 and the official business to $134,974.86, which the following year, June 30, 1901, had increased to $79,726.63 actual cash received for the commercial business, while the official business for that period was represented by $113,597.81, and taking the first ten months of the present year as a basis upon which to estimate the business of the whole fiscal year the commercial business would show an income of $88,324.56 and the official business a valuation of $127,974.41. The increase in commercial cash receipts for the fiscal year over that of 1900 amounting to $22,014.50 and that of the present year over 1901, with no addition of line, to an increase of $19,597.93.

While these figures show the money value of the increase in business, a better conception of the business of the government telegraph lines built up in the short space of three years may be gained by consideration of the number of messages handled, which in the present year amounted to 287,897 commercial messages and 161,636 on official business, a total of 449,533 original messages handled.

Captain Nesmith points out the general advantages to Cuban resources as follows:

But as large as has been the actual money income from commercial business and the financial profit to the government through conducting its own official business, of far greater value to the island have been the benefits conferred upon business, commerce, and the people by the building of this system, while the government has by this means avoided an expenditure of over $1,000,000, which amount the transmission of official business alone during the period of military occupation would have cost had not the government telegraph lines existed, and had it been necessary to send this business over the lines of the local cable companies.

The Signal Corps of the Army charged, in addition to furnishing means of rapid and secure communication to the Army of occupation and to the government, with the duty of rehabilitating and improving the telegraph lines of the island, entered upon the performance of those duties conscientiously and has striven with a singleness of purpose to so construct, advance, maintain, and operate the system as to not only produce revenue for the government, but to also bring about the best results for the commercial and business interests of the island and its people.

It is unquestioned that on occupying Cuba the American Army found a few dilapidated telegraph lines operated by antiquated methods, with tariff rates increasing in proportion to the length of the message, without free delivery, and with grave uncertainties as to espionage, secrecy, and delivery. This system, bad as it was, served only the western half of the island. In leaving Cuba there was turned over to the government a system of 3,500 miles, extending from San y Martinez in the west to Cape Maysi in the extreme east, with every seaport or town of importance electrically connected. The text map herewith shows the Cuban telegraph system on May 20, 1902. It may be said that the work of the American Army in the interest of Cuba, along all lines, is fairly well illustrated by the contrast offered between this text map and the one on page 13. The present instruments are of the best modern types, the transmission speedy and reliable, and the tariff rates exceedingly low, while the certainty of delivery and inviolability of messages are beyond question.

None of the commercial receipts have been spent, but they have been deposited without loss in the Cuban treasury, and every account has been systematically audited.

The phenomenal increase in telegrams, which have grown beyond expectation in number and in length even while general business has

decreased, testifies practically to the confidence of Cubans in the integrity of the Signal Corps management.

In connection with the system cared for by Captain Nesmith during the past year, the Chief Signal Officer of the Army has to point out that to Col. H. H. C. Dunwoody, Signal Corps, fell the labor and heat of the day, and the final results of his two years and four months' service in Cuba are most creditable to him. In giving him general instructions on December 10, 1898, the Chief Signal Officer said:

> Your principal duty is the repair and operation of such lines formerly belonging to the Spanish Government as may be transferred from time to time to the Signal Corps of the Army. You are to insure, first, that the operations of these lines are performed with efficiency, honesty, and economy; second, to install and operate such additional lines as may be necessary for military administration, and may be ordered by the commanding general of the island of Cuba or by the War Department. After assuming control of the lines such action should be immediately taken as will insure honest and economical administration.

The Chief Signal Officer of the Army expresses his opinion that the tenor of the general instructions given to Colonel Dunwoody have been carried out faithfully by him and by Captain Nesmith and other officers and the men of the Signal Corps of the Army. It is unquestioned that the work of instruction, installation, and maintenance have been performed with such efficiency, honesty, and economy as to inure to the advantage of Cuba and to the credit of the United States.

PHILIPPINE ISLANDS.

The very important duties connected with Signal Corps work in the Division of the Philippines were under the charge of Lieut. Col. James Allen, Signal Corps, until March 1, 1902, when he was relieved by Maj. William A. Glassford, Signal Corps, who has since remained in charge.

The magnificent system of telegraph lines and cables was very largely constructed and installed under Colonel Allen. This system, increased during the fiscal year by 2,600 miles, consisted on June 30, 1902, of 31 submarine cables, 1,326 miles in length, and land lines 5,108 miles in length, making an aggregate of 6,434 miles.

It is almost needless to say that the work of construction and installation, under the disturbed and difficult conditions existing in the archipelago, demanded talents of the highest order. The system stands to-day a monument to the energy, skill, and resourcefulness of the American soldier.

Equally able in technical requirements and administrative functions, Colonel Allen's work in the Philippines must always serve as a standard of attainment for Signal Corps officers. His successor, Maj. William A. Glassford, comes to his new command with qualities of success guaranteed by similar difficult work, though on a much smaller scale, in Porto Rico and Alaska. His work in the Philippines has been marked by material improvements in modern equipments and consequently in telegraphic and telephonic facilities which, initiated by his predecessor, have been brought under him to fuller fruition.

On entering the Philippine Islands the American Army found practically no existing telegraph lines. The few land lines connecting the Visayan cables of the Eastern Extension Telegraph Company had been promptly destroyed by the insurgents, as well as the lines in Luzon when they retreated before the advance of our army. The

only lines of any importance that came into our possession were several hundred miles of dilapidated and antiquated lines in the Cagayan Valley and along the west coast of Luzon.

Applying itself to the problem of establishing a suitable system of telegraphic intercommunication, the Signal Corps of the Army has constructed and laid from August, 1898, to June 30, 1902, approximately nine thousand miles of lines of telegraph, telephone, and submarine cable. About one-third of this mileage consisted of extensive temporary field lines erected for the purpose of maintaining communication between flying military columns and their bases, the latter being always in communication by means of permanent lines with division headquarters at Manila.

In connection with the withdrawal of the military forces from certain territory, the temporary lines were in most cases recovered, but in other cases destroyed by the hostile operations of the insurgents.

On June 30, 1902, the permanent system maintained and operated by the Signal Corps aggregated 6,434 miles, of which 5,108 were land lines and 1,326 miles cable.

EXTENT AND LOCATION OF TELEGRAPH SYSTEM.

A miniature chart of these lines is incorporated in the text herewith. The location and length of the submarine cables are as follows:

	Miles.
Laguna de Bay (Luzon):	
Calamba-Los Banos	4
Calamba–Santa Cruz	18
Santa Cruz–Siniloan	9
Manila–Cavite (Luzon)	8
Naic–Corregidor Island (Luzon)	12
Guinayangan–Pasacao (Luzon)	51
Legaspi–Bacon (Luzon)	29
Sorsogon (Luzon)–Palanog (Masbate)	62
Batangas (Luzon)–Calapan (Mindoro)	30
Calapan (Mindoro)–Boac (Marinduque)	45
Palanog (Masbate)–Calbayog (Samar)	75
Calbayog(Samar)–Catbalogan (Samar)	37
Catbalogan (Samar)–Carigara (Leyte)	45
Ormoc (Leyte)–Liloan (Cebu)	72
Liloan (Cebu)–Cebu (Cebu)	13
Milagros (Masbate)–Capiz (Panay)	74
Argao (Cebu)–Loon (Bohol)	14
Maasin (Leyte)–Surigao (Mindanao)	56
Oslob (Cebu)–Dumaguete (Negros)	17
Dumaguete (Negros)–Misamis (Mindanao)	115
Misamis (Mindanao)–Lintogup (Mindanao)	23
Misamis (Mindanao)–Iligan (Mindanao)	32
Iligan (Mindanao)–Cagayan (Mindanao)	60
Tucuran, (Mindanao)–Malabang (Mindanao)	48
Malabang (Mindanao)–Parang Parang (Mindanao)	24
Tucuran (Mindano)–Zamboanga (Mindanao)	158
Zamboanga (Mindanao)–Jolo (Jolo)	100
Zamboanga (Mindanao)–Isabela (Basilan)	18
Jolo (Jolo)–Siassi (Siassi)	50

This system affords prompt communication and consequently effective executive control, not only for the army but for the civil government, from Aparri and Bangui on the extreme north coast of Luzon to the island of Siassi in the extreme south within 60 miles of Borneo. All the important islands of the archipelago, except Romblon and Palawan, are connected, and even the former is to be reached by cable.

There have been constructed and laid during the fiscal year 1,044 miles of land line and 618 miles of submarine cable, aggregating 1,662 miles. There are 281 stations on these lines over which official messages may be transmitted; many of them, however, are telephone lines owing to the extreme difficulty of retaining in service skilled telegraph operators for the given pay.

The extension of lines, whether cable or land, has been limited to military necessities, and the military system is practically complete to-day save certain land lines necessary for operations in Mindanao, and the extension of a cable to be laid at the expense of the civil government from Mindanao to Romblon.

Major Glassford invites attention to the additional lines necessary to fully perfect the civil system in the islands where the adoption of the policy of the commercial companies looking to alternate routes would doubtless be in the interest of the archipelago. A short cable of some 20 miles between Panay and Negros would give an alternate route to the important island of Panay, while a double outlet would be given Mindanao whenever lines between Surigao and Cagayan can be established. On northern Luzon a double route would be insured by the construction of a short compound line between Aparri and Cape Bojeador.

One of the greatest difficulties in the efficient management of the telegraph system has been the lack of trained Signal Corps officers. The Chief Signal Officer of the Army has simply been unable to meet the repeated and urgent requests of the major-general commanding in the Philippines for additional Signal Corps officers. It may be pointed out that of the 35 officers of the corps 34 of them have had foreign service, and one of them is now in his second tour of duty in the Philippines.

There are now 11 officers of the Signal Corps, and two detailed officers of the line, serving in the Philippines charged with the maintenance and repair of 6,500 miles of line located on 13 separate islands. The daily work of these officers exceeds twelve hours and frequently runs to sixteen, and it covers every day in the year, Sundays and holidays; this in a tropical country where nature wages systematic war against the health and strength of the individual. There is but one outcome, which is briefly alluded to under the "Reorganization of the Signal Corps," that is, deterioration and breakdown with certainty of early retirement or early death for a corps of officers, which in its physical qualities was three years since unsurpassed in any army in the world. One-quarter of the officers of the Signal Corps are to-day disabled from Philippine service.

The effort to replace these officers from the line has been practically a failure, despite the cordial cooperation of the Secretary of War, who has approved every recommendation of the Chief Signal Officer of the Army in this respect, and of the major-general commanding the Philippines, who has likewise exerted his good offices in vain. The Secretary of War directed the detail of four competent line officers from officers serving in the Philippines, but only two such could be obtained, General Chaffee cabling that it was impossible to obtain suitably qualified officers for the work. By diligent efforts one officer has lately been obtained in the United States, and another has been ordered to relieve an officer already detailed, Lieut. Herbert G. Millar, whose relief was ordered just as he was becoming valuable.

The officers who have served with the corps during the fiscal year are: Capt. G. W. S. Stevens, Artillery Corps (now relieved); First Lieut. Evan H. Humphrey, Seventh Cavalry; First Lieut. Frederick M. Jones, Ninth Cavalry; and Second Lieut. James A. Higgins, Thirtieth Infantry, and Second Lieut. Herbert G. Millar, Field Artillery (ordered relieved). They have all performed arduous and valuable service.

Of the exigencies of the service in this direction, attention is invited to the remarks of Major Glassford, although the Chief Signal Officer of the Army does not concur in recommending the appointment of 10 additional volunteer lieutenants for Philippine service. The remedy lies in the increase of the corps and regular details from the line as hereafter recommended.

The demand for superintendents at the larger business and transfer offices is so great, and the retention of the experts now occupying these positions so essential, and in view of the fact that the expiration of the terms of service will soon remove nearly all of these first-class sergeants, I have to suggest that the law approved February 2, 1901, authorizing the appointment of 10 lieutenants for Philippine service be applied as a reward of long and faithful service, and as an inducement for those remaining. The retention of these expert telegraphers is absolutely necessary for the continued efficient operation of these lines.

CIVILIAN EMPLOYEES.

While, as shown later, the civil government, with whom the Signal Corps has always worked with perfect harmony, was unable to receive and operate the lines ready for transfer, yet it materially assisted in obtaining local employees, almost entirely Filipinos, by appropriating sums for this purpose.

The enlisted force of the Signal Corps, reduced from 532 at the beginning to 396 at the end of the fiscal year, a net loss of 136, has supplemented these losses as far as possible by civilian employees. On June 30, 1902, there were 301 civilians in service, of whom 13 Caucasians and 6 Filipinos were paid from Army appropriations, and 7 Caucasians and 275 Filipinos from civil appropriations. All employees have served most faithfully, and the Filipinos under supervision work with fidelity and cheerfulness.

ENLISTED FORCE IN THE PHILIPPINES.

During the fiscal year out of 297 men who have been discharged only 32 reenlisted, and of these only 17 in the first ten months of the year until the prospect of promotion given by the last Army bill was presented to the men. Repeated requisitions for additional men from the Commanding General, Division of the Philippines, were necessarily unfilled by the Chief Signal Officer of the Army, as the vacancies in the enlisted force have ranged during the year from 59 to 182, there being on July 1 in service 628 men, as against the 810 authorized by law.

The enlisted men of the Signal Corps in the Philippines, as indeed elsewhere, have justified the confidence reposed in them as a body of selected American soldiers. Unusual responsibilities, excessive hours of labor, and hazardous services have taxed their physical and mental qualities to the utmost, but they have responded to every demand in a manner worthy of the highest commendation.

Almost invariably they are men of high intelligence, superior character, and exemplary habits, and their ability, conduct, and courage

displayed from one end of the archipelago to the other have won numberless encomiums from officers of the line of the Army, in whose interest their labors are performed.

While other arms of the service are relieved at regular intervals, military exigencies have been such that, although authority to the same effect has been granted by the Secretary of War, relief has not not been possible for the Signal Corps in the Philippines. Of 352 men dropped from the rolls of the Signal Corps in the Philippines during the fiscal year only 3 have been granted furloughs, and only 8 relieved for duty in the United States. Where only 3 per cent of the men in the Signal Corps can look to relief annually the future offers no prospects, and as a result one-half of the command in the Philippines is now composed of recruits. Only one desertion has been reported during the year, and few grave offenses have been committed.

As an illustration of the trying conditions attending the service of enlisted men at remote stations, Major Glassford says:

When troops are withdrawn from posts at which it is necessary to continue a telegraph station for the purpose of relaying messages to points occupied, much hardship is worked upon the operators and linemen retained at the posts, and they are deserving of much credit for the manner in which they have been undergoing the same. The Filipinos having a diet of their own, it is almost impossible for an American to secure his subsistence in a town not occupied by the troops, unless he have the privilege of purchasing commissaries from the constabulary, which privilege is to be secured, if possible, for operators and linemen of the Signal Corps stationed at posts not occupied by the military. The work of cooking his own meals is also added to the many duties of the operators upon the withdrawal of troops. At Guinayagan, lately abandoned by the military, the Signal Corps has 4 operators and 1 lineman; the lineman has a stretch of 35 miles to keep in repair—two lines, 70 miles of wire—and each operator handles an average of 130 messages per day.

Lieutenant Wallace pays the following tribute to his men:

The enlisted men of the Signal Corps, as operators in ungarrisoned towns and as linemen, are thrown a great deal on their own resources. They are trustworthy and loyal and have a high esprit de corps. Instances of marked executive ability, as well as personal bravery, are common.

It is often necessary, owing to the scarcity of officers, to construct new lines and make expensive repairs to old lines under first-class sergeants. This means the employment of labor, contracting for poles, selecting routes, opening offices, and all other duties usually performed by an officer. In order to perform all these duties satisfactorily, the sergeants must speak three languages: English, Spanish, and Visayan. The construction and line men also acquire the native tongue as a necessity, as but little Spanish is spoken by the natives in the interior.

The work is hard and the hours of duty are long, and personal danger is sometimes great. The country offers none of the ordinary pleasures to a soldier when off duty, and the pay should be increased either by a larger percentage of non-commissioned officers or an increase to their present pay.

The men take ambushes and attacks by natives as a matter of course, and display a great deal of ingenuity in their efforts to entrap the wire cutters and ambushing parties. A notable case of this occurred between Abuyog and Dulag, Leyte. First-class Sergt. Paul J. Zaehringer was patrolling a piece of line, which he had reason to believe had been cut by insurgents. On nearing a point where he thought the trouble was likely to occur, and by exercising a little care, he surprised the insurgents, who were expecting his party to come up the road as usual. As a result, some 20 insurgents were killed, 8 prisoners and a number of rifles taken, and the line has not been cut in that section since, where before it had been of almost daily occurrence.

TELEGRAPH SCHOOLS.

In hopes of thus filling vacancies in the ranks of the Signal Corps, persistent efforts have been made through the cooperation of General Chaffee to train enlisted men from the line so as to replace the skilled

operators who declined to reenlist. Telegraph schools were opened in August, 1901, and several hundred enlisted men ordered to duty therein.

Major Glassford reports that—

> They have generally failed to make good operators. The school at Calapan, Mindoro, has, however, been quite successful, and several men from it have transferred to the Signal Corps, but not in sufficient number to supply the needed operators.
>
> A school to instruct natives as operators was also established, but none have qualified, and the best have acquired only a rate of receiving seven words per minute. No encouragement whatever is therefore to be expected from this source within a reasonable time.

CITY OF MANILA.

The telegraphic and telephonic facilities of the city of Manila have been extended and improved during the past year. There are no less than 51 miles of wire, partly lead-covered cables, on which are installed six telegraph offices and 177 telephones. The importance and appreciation of this telephone service by the civil government and the military officers are shown by the fact that there has been an average of 470 calls for the fifteen hours of daily service. The system not only includes Manila, but the Marinduque Valley and the provinces of Cavite and Rizal.

The central telegraph office has been fitted up with modern appliances, as shown by the inclosed photograph. Otherwise the enormous business centering in Manila could not be properly transacted. The generating plant is a source of electric power for all telegraph lines radiating from Manila, and also furnishes the current for lighting all the barracks, offices, and quarters at the Cuartel Infanteria.

CABLE SHIP BURNSIDE.

During the fiscal year the Signal Corps operations on the U. S. transport *Burnside*, which has been fitted up at great expense as a cable ship, have been under the supervision of Capt. George O. Squier, Signal Corps, Capt. L. D. Wildman, Signal Corps, and First Lieut. Charles de F. Chandler, Signal Corps, the latter officer reporting on the operations for the year.

Without impairing materially its use as a transport, the *Burnside* has performed extensive work of extreme value. The Signal Corps officer, in addition to performing the duties of cable installation and repairs, has also performed the duties of quartermaster and commissary to the advantage of both the Signal Corps and the Quartermaster's Department.

The following cables have been laid during the year:

Catbalogan (Samar) to Carigara (Leyte), 45 miles, July 13 to 14.
Catbalogan (Samar) to Calbayog (Samar), 37 miles, July 15 to 16.
Argao (Cebu) to Loon (Bohol), 14 miles, July 17.
Malabang (Mindanao) to Parang Parang (Mindanao), 24 miles, July 23 to 24.
Malabang (Mindanao) to Tucuran (Mindanao), 48 miles, July 25 to 26.
Calapan (Mindoro) to Batangas (Luzon), 30 miles, July 8.
Boac (Marinduque) to Calapan (Mindoro), 45 miles, July 15 to 16.
Calbayog (Samar) to Palanog (Masbate), 75 miles, July 5 to 8.
Palanog (Masbate) to Sorsogon (Luzon), 62 miles, September 10 to 13.
Legaspi (Luzon) to Bacon (Luzon), 29 miles, September 14 to 17.
Maasin (Leyte) to Surigao (Mindanao), 56 miles, September 25 to 30.
Zamboanga (Mindanao) to Isabela (Basilan), 18 miles, October 4 to 5.
Jolo (Jolo) to Siassi (Siassi), 50 miles, October 7 and 8.
Milegros (Masbate) to Capiz (Panay), 74 miles, November 2 to 5.

These 14 new cables laid during the year aggregate 607 miles. The *Burnside* traveled 9,905 miles for laying and repairing cables; 8,423 miles on transport duty carrying passengers and freight for the Quartermaster's Department. In addition the *Burnside* repaired 13 cables: The Malabang-Tucuran cable, on July 26; the Catbalogan-Carigara cable, on August 6; the Zamboanga-Tucuran cable, on July 21; the Jolo-Zamboanga cable, August 1; Maasin-Surigao cable, August 14 to 19; Manila-Cavite cable, November 23; Zamboanga-Jolo cable, February 24 and 25; Zamboanga-Tucuran cable, March 25 and 26; Misamis-Dumaguete cable, April 13; Misamis-Iligan cable, April 14; Malabang-Parang Parang, April 19; Zamboanga-Isabela cable, April 20 to 29; Ormoc-Cebu cable, May 5.

The installation and continued maintenance of the extensive cable system of the Philippine Archipelago has been extraordinarily successful, far exceeding the most sanguine expectations of the Chief Signal Officer of the Army. It is well known that commercial cables are transferred from the establishment where manufactured direct to the cable ship and thence to the bottom of the sea. The Signal Corps has been seriously handicapped by the necessity of twice as many transfers, which more than doubles the chance of injury to, and necessarily shortens the life of, the cable. The cable now goes from the manufacturing establishment to a lighter or car, thence to a commercial transport, then to the cable ship, and finally to the ocean bed. Indeed, some of the cable used has been handled no less than seven times before it was laid. The conditions of transfer by commercial steamers to Manila have been such as, in the opinion of foreign cable experts, should totally destroy the usefulness of the cable. It is officially reported that one large lot of cable thus shipped from New York to Manila, not only was covered with heavy extraneous freight and consequently without ventilation, but in passing through the Tropics the entire mass was heated to such an extent that frequent tests showed the temperature of the hold to be 92° F.

The high physical character of the American-made cable is illustrated, however, by the fact that such cables, after subjection to extreme vicissitudes of physical condition, have worked uninterruptedly for periods ranging from one to three years.

The presence of a properly equipped cable ship made it possible to restore communications speedily at a minimum of expense. The interruptions referred to lasted, as a rule, for two or three days only, although in the case of Maasin-Surigao, where 2 miles of cable had to be replaced owing to the extensive earthquake, there was a delay of five days. In comparison with this instance the Manila-Iloilo, belonging to the Eastern Extension Company, was interrupted some twenty-nine days. An estimate can be formed of the cost of repairing these 13 cables had it been necessary to hire a cable ship of the Eastern Extension Company, from the fact that the expense account of the Eastern Extension Company's cable ship in proceeding from Singapore to Cavite to repair the cable cut by Admiral Dewey amounted to £855, about $4,200; this in a case where there was no preliminary work and no dredging, but only the splicing of the cable.

In order to insure the proper maintenance of these cables they should be regularly inspected and tested, cable buoys should be repaired and replaced, and other usual work connected with cable repairs and testing be carried on.

The policy announced by Major-General Chaffee to the Chief Signal

Officer of the Army that, retaining the transport *Burnside* for inter-island service, she would be at any time available for cable repairs is the most economical and satisfactory solution of the question.

During the year the *Burnside* spent 42 per cent of her actual time on transport duties and 58 per cent in cable operations. It is not probable that more than 20 per cent of the ship's time will be needed for cable work the coming year, but the necessity of this or another transport properly equipped for cable is absolutely indispensable for the cable system. As extended portions of the archipelago are subject to earthquakes, frequent interruptions of cable are probable. Any alterations or changes which would reduce the tanks below two, or which would interfere with the cable machinery, would be, in the opinion of the Chief Signal Officer, a great mistake.

DEPARTMENT OF NORTH LUZON.

This department was formed by the consolidation of North Luzon and South Luzon. The latter department until its discontinuance, November 20, 1901, had as its signal officer Capt. Carl F. Hartmann, Signal Corps.

In addition to the work of his department, Captain Hartmann handled the line work of Manila, which from its perplexity and extent was a most difficult problem. Among other installations made by him was a large quantity of twenty-pair lead covered cable, which to a considerable extent was of necessity aerial instead of underground. In addition Captain Hartmann most efficiently supervised the transfer of the Signal Corps electrical plant, consisting of dynamos, storage batteries, and other expensive material from the old to the new location. Under his efficient control the interruption to lines caused by the violent typhoon of October 14 was restored to complete working order throughout the department by the night of October 15. Captain Hartmann for a time also performed the important duties of traffic manager for a military telegraph and telephone system of the division, regulating the transmission of messages, determining the routes, forming the circuits, etc. He was relieved on May 26, 1902, of this duty by Capt. C. McK. Saltzman, whose aptitude and technical knowledge have made him unusually valuable in this connection.

On the reorganization of departments, May 5, 1902, Maj. W. A. Glassford, in addition to his duties as signal officer of the division, assumed those of the Department of North Philippines, having as his principal assistant First Lieut. Frank E. Lyman, jr., Signal Corps. Lieutenant Lyman presents the formal report for the department. In this he says:

> During the year the principal field operations in which the Signal Corps participated were in the fourth separate brigade in the campaign against General Bollarino, in Albay Province, and in the third separate brigade in the campaign against General Malvar, in Batangas, Laguna, and Tayabas provinces. In the latter brigade, by direction of the commanding general, some 70 miles of field lines were constructed and operated by telephones and kits of type "D." Nearly every station in the command was connected with the general telegraph system, making it possible for the commanding general to instantly communicate with station commanders. A cable was also laid from Los Banos, Laguna, to Maligi Island, in Laguna de Bay, a distance of 9 miles. Some of the above-mentioned field lines have been turned over to the constabulary since the surrender of Malvar, and others will be recovered.

It may be added that Lieutenant Lyman served with great credit in the field with the third separate brigade, December to January. During this campaign Corpl. James Murphy and Privates Michael Doran

and Hildeman L. Johnson displayed conspicuous gallantry under fire at Canderlaria, Tayabas, on December 10, 1901, for which they received the written commendation of Brig. Gen. J. F. Bell and Maj. Gen. Adna R. Chaffee.

Lieutenant Lyman reports that the natives have been employed as much as possible in line building and repair, and states that—

> When constantly under the eye of signalmen the work of natives is satisfactory; when left alone it is not.

On November 11, 1901, the division commander issued General Orders, No. 347, directing the chief signal officer of the division to issue to isolated stations upon the coast with which there is no telegraphic communication and to which no regular boats apply frequently the letters "D" and "B" of the International Code of Signals to be used in communication with the Navy and ships of the Army transport service when in need of their assistance. The following stations were equipped: Currimao, Iba, Ballar, Binangonan, Cubat, Matnao, Bulan, Donosal, Sorsogon, Bagay, Daet, Capalonga, Paracale, Catanauan, Pitogo, Loboo, Romblon, Abra de Ilog, Calapan, Pola, Palaun, Manjarin, Naujan, and Pinamalayan.

Lieutenant Lyman's report shows that owing to lack of officers, many districts have been put in charge of sergeants, who are responsible not only for the condition of lines, but the preparation of pay rolls, etc. While the necessities of the occasion oblige Signal Corps sergeants in charge of telegraph offices to receive and to be accountable for tariffs on telegrams, yet it is contrary to the public policy to intrust to the enlisted men of the Army insular or other funds for disbursement, and although restriction of this practice causes annoying delays and vexatious discussions between the noncommissioned officers and the debtors, yet such restrictions have been found necessary.

DEPARTMENT OF SOUTH PHILIPPINES.

The Department of South Philippines, formed from the departments of Visayas and of Mindanao and Jolo, has been efficiently served by Capt. Charles T. Parker, Corps of Artillery, Capt. John H. Pershing, First Cavalry, and Maj. James F. Pettit, inspector-general of the Department of Mindanao and Jolo. To these officers credit is due for the intelligent interest with which they assumed and performed duties of a technical character, which were handled by them in a most satisfactory manner. Of the Signal Corps officers, Capt. Leonard D. Wildman was department signal officer until March 15, 1902, when he was relieved by First Lieut. Charles S. Wallace, Signal Corps, who remained on duty at the end of the year. Captain Wildman's administrative ability and technical knowledge enabled him to handle the affairs of the department in a most efficient manner under adverse conditions in times of great difficulty. First Lieut. Charles S. Wallace, in assuming the duties of signal officer, Department of South Philippines, brought to them an unusually wide experience gained in nearly two year's field and office work in the islands of Cebu, Masbate, and Samar. Lieutenant Wallace has distinguished himself both with troops in the field and in technical work connected with the extensive telegraph lines and cables of the department.

Commenting on wire interruptions, Lieutenant Wallace reports that—

> On the 1st of July the military situation on the island of Cebu was in an extremely unsatisfactory condition. It became gradually worse, so far as the Signal Corps was

concerned, culminating in the destruction of almost all of the lines south of Cebu. This attack on the lines was apparently preconcerted, and between 12 and 13 miles of line, cut in several different places, was carried away, insulators broken, and poles cut down. Immediate steps were taken by the military authorities to furnish sufficient guard for the linemen, and in three days these lines were repaired and in working order.

Speaking of troublesome conditions in Leyte, he continues:

The following extract from the departmental log for the three months, from January 1 to March 31, 1902, will illustrate what wire cutting by insurgents means and the amount of work necessary to keep lines in working order:

Date.	Place.	Cause.
Jan. 1	Ormoc-Baybay, Leyte	4 poles cut; 6 miles wire carried away.
4	.....do	4 miles wire carried away.
7	.....do	200 yards wire carried away.
13	.....do	300 yards wire carried away.
17	.....do	Wire cut.
18	.....do	2 poles cut; 300 yards wire carried away; repair party fired on.
30	.....do	Wire cut; party fired on.
Feb. 5	.....do	200 yards wire carried away.
19	Ormoc-Jaro, Leyte	Wire cut; party ambushed.
Mar. 1	Hindang, Leyte	5 miles wire carried away.
3	Baybay-Matalom, Leyte	1 mile wire carried away.
6	South of Ormoc, Leyte	100 yards wire carried away.
8	Hilongas, Leyte	1½ miles wire carried away.
10	Ormoc-Jaro, Leyte	1 pole carried away.
11	North of Ormoc, Leyte	Iron poles and wire carried away.
15	.....do	¼ mile wire carried away; repair party fired on.
18	Baybay-Matalom, Leyte	½ mile wire carried away.
22	Hilongas, Leyte	¾ mile wire carried away.
26	Baybay-Ormoc, Leyte	200 yards wire carried away.
26	Ormoc-Caridad, Leyte	180 yards wire carried away.
27	.....do	240 yards wire carried away.
27	Ormoc-Baybay, Leyte	5 spans wire carried away; cut twice at 12-hour intervals; party fired on.
28	.....do	200 yards wire carred away.

Of Signal Corps work during the Samar campaign Lieutenant Wallace says:

The island of Samar was in a state of active insurrection at the beginning of the fiscal year. The only towns at that time with telegraph communication were Catbalogan and Calbayog. At the time of the installation of the cable from Cebu to Ormoc a short length of cable was also laid across the straits separating Leyte and Samar, near Tacloban. In July this was extended by land line to Basey, giving that place telephone connection with Tacloban. Later a telephone line was constructed from Calbayog to the mouth of the Gandara River, but after a few months was abandoned, owing to the withdrawal of troops from the latter place. On November 1 the brigade commander submitted an elaborate scheme comprising some several hundred miles of land lines connecting the interior and east-coast garrisons with the cable stations at Calbayog, Catbalogan, and Tacloban, and in December the signal officer of the department visited the different stations on both the east and west coasts of the island and equipped four construction parties, in command of officers detailed from the line of the Army for the purpose by the brigade commander, with funds and material, including 400 miles of wire and 30 telephones. The parties were to work from Basey south to Balangiga; Calbayog north to Laguan; Oras south along the east coast, and from Borongon north. The Oras and Borongon parties were unable to get any line in operation, the insurgents destroying it as fast as it could be put up. The Calbayog party succeeded in getting a line up to Mauo, 48 miles north. The Basey party constructed a line to Balangiga, 30 miles. Both of these lines passed through swamps and jungles for most of the distance, were cut almost daily, and have been of little benefit. They were finally abandoned until such time as the country should become more settled. * * *

The difficulty on Samar is not in constructing lines, but in maintaining them. The people travel almost entirely by the rivers, which flow in every direction to the sea from the high mountains in the interior. The trails are little more than paths made by animals through dense forests and over precipitous mountain ranges.

The following from Lieutenant Wallace's report is of interest in connection with military operations in Mindanao:

A telegraph line is under construction to connect Cottobato with Davao, via Makar, for which work the Civil Commission has made a special allotment of $5,000. It has been completed to a point some 70 miles south of Davao and 50 miles east of Cottobato. Construction parties are under the command of competent officers, and the line should be completed during the coming summer. The total distance will be about 350 miles. The route selected by the brigade commander trends southwest from Cottobato, leaving the river at Riena Regente, passing west to Lake Linguasin, and touching Sarangan on Lake Buluan, rounding Mount Matutun, and taking a northeasterly course to Digos on Davao Bay, thence to Davao along the coast. A loop from the foot of Mount Matutun will connect with Makar. This country is either mountainous or extremely swampy, and if the natives in the vicinity ever rise the line will have to be abandoned.

In April it was seen that the natives in the Lake Lanao district were becoming hostile and extremely insolent, and this culminated in an attack on Lieut. William D. Forsyth, Fifteenth Cavalry, and about 20 men, who were engaged in investigating the route for a road and telegraph line from Parang to Lake Lanao. In this engagement 1 man was killed and a number of horses captured. After many attempts to recover the animals and secure the arrest of the offenders an expedition to the lake was determined upon, first under the direction of Gen. Frank D. Baldwin and later commanded in person by Gen. George W. Davis, brigade commander.

As it was shown that active resistance would be offered in the occupation of this region, a large number of troops were ordered to Malabang as a base, and the signal corps was ordered to keep in communication with this force. Lieut. W. G. Cooper, Philippine Scouts, detailed to the signal corps for duty, was sent to Malabang with a considerable amount of material and all the linemen and operators who could be spared. Work was immediately commenced and a trail toward the lake widened for the passage of ammunition wagons and supplies. The signal corps kept up with the engineers and established stations with telegraph operators every 5 miles along the trail.

On the 1st day of May the main body of troops started for the lake, and on May 3 stormed the Moro fort on Lake Lanao, at what is now known as Camp Vicars. The Signal Corps men kept up with the marching troops and opened a station at the front. Lieut. Basil O. Lenoir, Signal Corps, U. S. Army, relieved Lieutenant Cooper on May 29 as field signal officer of this expedition. Immediately after Camp Vicars was established a new permanent road was commenced from Malabang to the lake. This road was closely followed by the telegraph line, and each camp established had a signal station and telegraph operator on duty. After this line was nearly completed to Camp Vicars it was decided to cut out the trees on each side of the road for a distance of 100 feet. This recutting necessitated an entire change of the line. The work is not yet entirely completed, but Camp Vicars, the headquarters of the Lake, has never been out of communication except for short intervals since its occupation by the American troops. In the near future it is possible that this line will be extended to other towns on the lake, and the material is already on the ground for its construction.

Of Filipino labor, with which Lieutenant Wallace has had two years' constant experience, he says:

Natives are employed as laborers and drivers for native transportation on the construction of new lines and as messengers, linemen, janitors, etc., in the maintenance of existing lines. They are paid on construction duty 50 cents, Mexican, per day and rations; as messengers and linemen, from $15 to $25 per month and rations, and are scarcely worth even this low rate of wages. On construction work in the interior, where it is desired to employ a number of them at one time, it can only be done by the presidente of the town ordering them to work. As messengers and linemen they are careless and unreliable. This is not the fault of any prejudice against the Americans or of ill treatment, but it is the natural antipathy of the native to any form of steady labor. A native will work hard for a day or two if he is assured of sufficient pay to support him in idleness for the rest of the week. Linemen are not always occupied, therefore these positions are much sought after by natives, as the wages are considerably more than they were accustomed to receive under the Spanish régime, while the cost of living for them is very little higher. Every native aspires to live like a gentleman and without manual labor, therefore they are very anxious to learn telegraphy and to become proficient in clerical work.

He continues:

While stationed at Tacloban, Leyte, with the cooperation of Capt. Henry T. Allen, Sixth Cavalry, U. S. Army, at that time governor of the island, Lieutenant Wallace opened a telegraph school for the instruction of native boys. Each presidente in the province was instructed by the governor to send to Tacloban the most intelligent and best educated young men in his town for this instruction. Ten or twelve of these boys reported and were given six hours' instruction daily by an experienced American telegrapher. They did not learn as readily as American boys, but picked up the mechanical sending and receiving very rapidly. As they progressed they were detailed by roster for duty in the telegraph office as counter boys, waiting on customers, preparing messages for delivery, etc. Only two of these boys had sufficient intelligence to perform even this simple duty. They were exasperatingly slow and nothing seemed to make them understand it was necessary to hurry. This school was broken up after about two months, owing to the transfer to other duties of the officers interested in it.

The Eastern Extension Company used natives in their offices as operators and for clerical work, but their manner of handling telegrams is very different from the American plan, and I doubt very much if any native, in a reasonable time, could be educated to handle the large amount of business handled daily by the American operator. If a telegraph system in the Philippine Islands is to be maintained at its present high standard of efficiency it will be by the employment of white operators and linemen.

Referring to more peaceful themes, the press service inaugurated in accordance with instructions from the Chief Signal Officer of the Army has been continued and expanded, as shown by the following:

A daily bulletin service has been established since December, formerly under the auspices of the Associated Press, and more recently controlled by the office of the adjutant-general of the division. The cost of the service between the United States and Manila is covered by personal subscriptions of officers and civilians throughout the islands, the messages being transmitted over the Signal Corps lines free. These bulletins are practically the only news received at many of the out-of-the-way stations, and consist of several hundred words daily of the most important happenings throughout the world.

GENERAL CHARACTER AND SCOPE OF WORK.

The introduction of repeaters and duplexing of land lines and cables has steadily progressed, improving greatly the efficiency and rapidity of the service; indeed, without the most modern improved methods the Signal Corps would have been unable to have transacted the enormous volume of telegraph business that has been filed with it. The appliances are in all cases of the latest modern types. The wet cell has been discarded wherever possible, being replaced by storage batteries. The existing conditions are fairly illustrated by the following photographic views of the electrical generating plant and the power switch board of the Signal Corps at Manila.

The volume of business has increased 107 per cent, as compared with the previous year, but such have been the improved methods that the time of transmission from department headquarters at Cebu to any station in the department is less than an hour, and through business to Manila, where there is only a single conductor cable on trunk line, is handled in slightly over an hour.

The character of the service has been greatly improved by the appointment of an officer as general traffic manager. On this point Major Glassford says:

At the head of the operating department has been placed an officer who brings to the work his experience as a commercial and railroad operator. As most of the operators are recruited from the railroads and commercial lines in the United States, these men efficiently respond to his trained superintendence. The service is all the facilities make possible.

Owing to the scanty postal facilities, all important correspondence, whether civil, commercial, or military, is sent by telegraph over the lines of the Army Signal Corps. On this point Major Glassford says:

Military orders and matters usually sent by letter had been transmitted by telegraph owing to the absence of other certain means of communication; such has been the importance of these communications that the military and civil administrations largely owe their efficiency to them.

Of the field service during the year Major Glassford states that—

The principal field operations during the year in which the Signal Corps participated were in the Fourth Separate Brigade against General Ballarmino, who surrendered to Colonel Wint at Legaspi, and the Third Separate Brigade against General Malvar, who surrendered to General Bell at Lipa. In the latter campaign a second wire was strung from Batangas to Manila and 70 miles of field lines were built, connecting nearly every post in the provinces of Batangas, Laguna, and Tayabas. The Signal Officer is in receipt of a telegram from the commanding general, Third Separate Brigade, thanking officers and men for their work. For gallantry in defending telegraph office against attack of the insurgents of Candelaria, Tayabas Province, the commanding general of the division expressed his thanks to Signal Corps men.

As showing the character of the service rendered by Signal Corps lines, and their indispensability to successful military operations, may be quoted the telegram of Gen. J. Franklin Bell at the end of the campaign which resulted in the establishment of peace conditions throughout the archipelago. General Bell says:

I have now sent the last telegraphic circular I contemplate sending, a fact which affords me quite as much satisfaction and relief as I know it will afford the personnel of your corps serving in connection with this brigade. Mail facilities are so very slow and uncertain in this brigade that had it not been for the exceptionally valuable service rendered me by your corps in connection with my work here that I feel morally certain that I could not have accomplished in six months what has already been accomplished in about six weeks. I wish to extend to you, and through you to every man and officer of your corps who has participated in this labor, my sincere thanks for the service rendered me and their Government in this brigade. I am not insensible to the fact that they have been called upon and taxed in quite an unusual manner, but I think they will also realize that they have been assisting in a hard campaign worked out under very unusual conditions. The rapidity of such success as we have attained depends almost exclusively upon the very exceptional and valuable service the members of your corps have rendered me; at least such rapidity could not possibly have been achieved without their assistance. Please thank each individual for me.

MONEY VALUE IN BUSINESS DONE.

Reports in considerable detail have been made of the business transacted by telegraph and telephone in the Philippine Islands during the past fiscal year. If these telegrams had been all transmitted over the lines of the Eastern Extension Telegraph Company, at minimum commercial tariffs in the archipelago, their cost to the Government would have aggregated the large sum of $3,109,677.22. Augmenting this by $70,000 for telephone tariffs and $49,444.66 for commercial tariffs, the grand aggregate value of Signal Corps work is $3,229,121.88. Regular reports for ten months show that there were sent in that period 799,250 messages on official business, which approximately determines the number of official telegrams for the fiscal year as 933,834. It is estimated that the average length of official telegrams is 33.3 words, this being the length of 459 official and other relayed messages at Cebu in a single day. Probably the real length exceeds this, as at Cebu there have been sent none of the long telegraphic circulars running into thousands of words, which, filed as a single message, was sent simultaneously to many stations.

Assuming the average length of official messages at 33.3 words, and one-half of these messages pass from one island to another, the regular Signal Corps rate would be just $1 per message. That the rate of 3 cents per word on these messages is extremely low may be realized from the fact that the United States pays 5 cents per word, plus a large subsidy, on telegrams over the commercial cable of the Eastern Extension Company, a distance of 20 miles between Iloilo and Bacolod.

This shows that the tariffs on official messages sent over Signal Corps lines at the very low rates fixed by the Chief Signal Officer of the Army for telegrams in the Philippines has a money value for the year of $933,834.

In addition, calculating the telephone rates at 10 cents for each message, the telephone tariffs exceed $70,000, being $17,000 for the station of Manila alone, and calculated for other stations on the basis of ten messages per day—a very low estimate. This brings up the total tariff values of official messages, by telegraph and telephone, to $1,033,834. As the receipts for the transmission of commercial messages reached $49,444.66, the entire tariffs aggregate $1,083,278.66. These figures are certainly below rather than above the truth.

It may be added that official messages are strictly confined to public business, the commanding general, Division of the Philippines, having long since ordered the discontinuance of the practice of free transmissal of private messages for officers of the Army, who, however, have been accorded half rate.

An analysis of Major Glassford's statistics shows that the official telegrams were sent by different governmental departments as follows: Philippine civil government, 0.114 per cent; War Department, 0.856 per cent; Navy Department, 0.017 per cent; and other United States departments, 0.013 per cent. It further appears that the official business of the War Department is rapidly decreasing, while that of the Philippine civil government and of the other United States Government departments are materially increasing. This is shown by the departures of the percentages for May, the last month available, as compared with the averages for the year as follows: War Department decrease, 0.083 per cent; Philippine civil-government increase, 0.054 per cent; Navy Department increase, 0.005 per cent; other United States Government departments increase, 0.024 per cent.

The commercial business systematically increases, as is shown by comparison of the receipts of September, 1901, the first full month after the opening of the system, $3,677.73, with those of June, 1902, $4,969.17—an increase of more than one-third. It is safe to assume that hereafter the income from commercial business will be at least $60,000 per year. As an illustrative instance of the appreciation of the telegraph by the local traders should be stated the fact that the hemp dealers send out to their customers, at the various points, daily quotations of the Manila market.

EXPENSES.

In view of the foregoing statements regarding money value of work done by the Signal Corps in the Philippines, it is just to consider the other side of the ledger with a view of determining whether the expenditures for such service are excessive. There have been compiled data showing as far as possible the entire cost of the Signal Corps of the

Army in the Philippines and of the telegraph system, and estimated equitable balances have been struck both with the United States and with the Philippine civil government.

There have been spent during the fiscal year by the United States on telegraph lines in the Philippines $31,000, almost all of which, $26,360.11, were for services. In addition, it is estimated that property to the value of $151,000 has been shipped from the United States.

It is impossible to determine to what extent the Signal Corps should be credited on account of the permanent plant added during the fiscal year. This plant consists of 612 miles of submarine cable installed during the year and now in good working order, and of 1,043 miles of land line built during the year and now in operation. If these were considered the balance would be much more greatly in favor of the Signal Corps. It is impossible, without great labor, to determine how much of the permanent plant was purchased from the appropriations of this fiscal year. The entire plant is estimated to be worth at present $1,060,110. This value is obtained by fixing a value of $105 for line, instruments, and battery for each of the 5,108 miles of land telegraph line in operation. Similarly, the 1,326 miles of submarine cable are estimated as $395 per mile laid and installed.

In view of the above approximate valuations, giving an aggregate of $1,060,110, it might be fair to assume that a depreciation of 10 per cent per annum for both cable and land lines would be a fair estimate; for land lines the depreciation would be greater than this, but for cables it would be less; making a maintenance cost for material and labor $106,011. The entire annual cost to the United States of maintaining the telegraph system of the Philippines for the fiscal year ending June 30, 1902, may then be stated as follows:

Pay of officers	$26,700.00
Pay, cost of clothing and rations of men	212,449.00
Transportation (estimated)	25,000.00
One-half of the expenses of the *Burnside* (cable ship)	54,500.00
Local incidental expenses	35,687.07
Ten per cent depreciation, as above stated	106,011.00
Total	460,347.07

In addition to the cost to the United States, the Philippine civil government has expended $88,619.31, most of which is for payment of native employees.

It is interesting to compare the annual costs of this business to the United States with the annual estimated value of the business if done by a commercial company. It is too often assumed that army work is performed in an extravagant and inefficient manner, as compared with commercial enterprises. The preceding data show, however, that the entire cost of maintenance, including the pay and allowances of all officers and men serving in the Philippines, the cable expenses of the *Burnside*, all material for maintenance and its transportation, the salaries of all civilian employees connected with the work of installation, maintenance and operation, and the depreciation of the plant of the telegraph system during the past year, is less than $500,000.

As an offset telegraphic business has been transacted which, at the current commercial rates in the Philippines, would have cost the United States and Philippine governments no less than $3,109,667.22. In addition, not only was telephone business to the value of $70,000 like-

wise done, but the sum of $49,444.66 was collected for commercial tariffs and turned into the Philippine treasury. In other words, the Signal Corps of the Army has rendered services in the Philippines whose pecuniary value is more than six times the cost of its total expenses. This has simply been done by overworking officers and men and by underpayment of the men, as elsewhere mentioned.

As will be seen, the United States and the Philippine civil government are getting for approximately one-sixth of what it would pay commercial companies a service which must of necessity be better, as it is rendered by men whose whole loyalty is certainly involved in giving good service to the country.

The proportion of this business done solely for the United States has a tariff value of $892,846 per annum, calculated under the Signal Corps tariff, or of $2,976,153 on a commercial basis.

Let us turn now to the Philippine civil government. As many telegraph offices are being maintained only incidentally for military purposes, the civil government has recognized the value of these lines by making appropriation of civil funds for their support and maintenance, pending the transfer of these lines permanently to the civil government. The policy followed by the Chief Signal Officer of the Army has been to separate, as far as possible, the two services, and the process, as stated elsewhere, is now in operation.

There have been appropriated from the civil funds $97,000 during the fiscal year, of which $9,000 will be turned into the treasury, leaving an expenditure of $88,000, of which $52,167.08 were for services.

There have been turned into the treasury of the Philippine Islands all commercial line receipts, amounting to $49,444.66. This leaves the actual cost to the insular treasury for the maintenance of certain lines $38,555.34. The telegrams of the civil government and its agents are transmitted free. For the fiscal year the money value of services thus performed would approximate, at regular tariff rates, the sum of $103,000, leaving an equitable balance in favor of the Signal Corps of $64,000. In addition, the civil government has a reversionary interest in a permanent plant valued at $1,060,110, installed during the past fiscal years, of which it is now beginning to receive results in the shape of transferred lines and instruments, as stated later.

TRANSFER OF PHILIPPINE TELEGRAPH LINES.

The negotiations leading to the gradual transfer of the telegraph lines from the control of the Army to that of the civil government in the Philippines have been continued throughout the year. As previously reported, there have been established at various points throughout the archipelago telegraph schools, whereat the Signal Corps has instructed and selected classes of intelligent Filipinos, who were selected by the department of public instruction of the civil government. It is possible that untoward conditions in the archipelago may have interferred with the presentation of the best class of candidates for such instruction. Whether this be so or not, the advances made have not been so rapid as was anticipated.

The question of the transfer of lines has been several times renewed by the Chief Signal Officer of the Army. The Hon. William H. Taft, governor of the Philippine Archipelago, informed the Chief Signal Officer of the Army, in a conference in this city in April, that the con-

dition of affairs was such as to render it, in his opinion, inadvisable to make any such transfer until after the end of the fiscal year 1902; but he promised to give the matter careful attention on his return to Manila. As soon as Governor Taft arrived in the Philippine Islands the matter was taken up by the Chief Signal Officer by letter and by telegram.

The Chief Signal Officer recommended the transfer of all detached and outlying telephone lines at once, to be followed from month to month by telegraph lines on the islands of Masbate, Marinduque, and Bohol; afterwards by such other lines as might be later agreed upon by General Davis, Governor Taft, and the Chief Signal Officer.

The formal transfer of such lines doubtless began in September of this year when, at the request of Governor Taft, First Lieut. Charles S. Wallace, Signal Corps, was detailed to take charge of the work. There will be retained by the Signal Corps for strictly military purposes the entire cable system, with one through connecting land line, so as to keep division, department, and post headquarters in direct communication. The governor of the Philippine Islands, the commanding general Division of the Philippines, and the Chief Signal Officer of the Army all concur in this method. The Army alone has the means of maintaining the cable system, which can be turned over as a whole with far greater advantage than in parts.

REDUCTION OF CABLE RATES.

In accordance with the request of Governor William H. Taft, Philippine Islands, the Chief Signal Officer of the Army visited, in October, 1901, the headquarters of the Eastern Telegraph Company, Limited, for the purpose of conference on matters of importance to the civil government.

One object in view was the increasing of the commercial cable facilities of the Philippine Islands so that archipelago, with a population of some 9,000,000 people, should not be dependent upon a single cable which has already been in use for many years—that extending from Manila to Hongkong.

It was thought possible by the Philippine Commission, and also by the Chief Signal Officer of the Army, that cable communication with the rest of the world could be extended by supplementing the cable between Hongkong and Manila by a second cable from Siasi, Sulu Archipelago, to Sandakan, North Borneo, and possibly by a third cable connecting Cape Bojeador, or Aparri, on the north coast of Luzon with the Japan cable systems in Formosa. The conditions at that time, however, proved to be such that the establishment of an alternate commercial route was impracticable.

Very important results followed negotiations looking to the reduction of cable rates between the Philippine Islands, the United States, and other points. These rates were viewed both by the civil government and by the Army as excessive, in view of the enormous volume of business transacted in late years by telegraph to and from the islands. The action was timely, as a readjustment of eastern cable rates was clearly imminent.

Repeated conferences were had with Sir John Pender, chairman of the board of directors of the Eastern Telegraph Company, Sir John Wolfe-Barry, chairman of the board of directors of the Eastern Exten-

sion Australasia and China Telegraph Company, and with Mr. F. E. Hesse, secretary of both companies.

The aspects of the case were thoroughly and carefully considered by the officials of the Eastern and Eastern Extension Telegraph companies, who, it should be said, displayed a broad and liberal spirit toward the United States in connection with these questions. They were approached strictly on the practical side of the question, the Chief Signal Officer of the Army stating that this was a matter solely for them to determine with a view to the interests of their stockholders, as they would probably be affected by the rapidly growing telegraph business of the company in the Philippine Islands.

It was pointed out to them that existing telegraphic conditions were considered to be exceedingly onerous to the American people as well as to the inhabitants of the Philippine Islands. The maintenance of high rates and a continuance of existing conditions imperiled, it was urged, the good will of the Philippine government.

It was not concealed that the government hoped in the near future to see additional cables reaching the archipelago not only from Asiatic points, but also from the Continent of America. Information was given the company of the establishment on the Signal Corps telegraph lines in the Philippine Islands of 60 commercial cable offices. They were advised that the existing system of telegraph lines in the Philippine Islands would be speedily transferred to, and be operated by, the civil government, and that meanwhile there was a readiness on the part of both the civil government and the Signal Corps of the Army to cooperate fully in the interchange of commercial business on terms that should be beneficial to all parties. It was further suggested that if exorbitant rates were continued, the advent of a competitor would naturally turn the current of commercial business very largely to the lines of such competitor.

Finally the Chief Signal Officer of the Army invited attention to the fact that the expensive telegraphic environment of Australia had been materially modified on account of the proposed establishment of a government cable from Vancouver to Australia, by the action of the Eastern Telegraph Company and the Eastern Extension Company, who had a year since reduced by one-half the rates to Australia.

The situation and prospects were thoroughly discussed and the final action of the company was most liberal, the reduction being as follows:

The reduction in telegraphic rates amounts to 70 cents on every word sent to the Philippine Islands from the United States, an average reduction of 30 per cent on the former charges for messages.

The rate from Manila to the United States was made to agree with the rate from this country, but as such rate had been previously complicated by exchange and was originally lower than the outward rate, the saving from Manila is not so great as to Manila.

The reductions from Europe were 36 per cent of the old rate—from 8s. 7d. to 5s. 6d.—practically 74 cents per word. The smallest reductions were those obtained to the Dutch Indies and Cochin China, which varied from 14 per cent to 18 per cent. The reductions were more material to Singapore, 18 cents per word, and to India, 44 cents per word.

Communication with Japan was made much cheaper by a reduction of 24 per cent, while that to the China coast, Shanghai, Fuchau, and Hongkong was reduced from 40 to 47 cents per word, respectively, the rate to Hongkong being made very low, only 16 cents per word.

Data relative to military messages sent from Washington to Manila since November 16, 1901, indicate an annual saving in the War Department alone of $32,430.25. Data are not available as to War Department messages sent from Manila nor as to messages of the Navy, State, and other departments of the National Government to and from the Philippine Islands, China, Japan, and the Straits Settlements. It is, however, reasonable to assume that the new tariff will make a saving to the United States Government of not less than $100,000 per year. The commercial and domestic tariffs likewise have benefited greatly by these negotiations, the reduction to the Philippine Islands being 70 cents on every word cabled from this country by private parties.

PACIFIC CABLE.

The Chief Signal Officer of the Army has previously expressed his official opinion that the military command by the United States of the Pacific in the future will depend very largely on cable communications under its complete control.

The importance of an alternate route between the Philippine Islands and the Asiatic coast has been strongly emphasized by the interruption to the Manila-Hongkong cable in June, 1901, which fortunately lasted only ten days. It is a matter of grave importance that a second route should be obtained either by an all-American Pacific cable or by connection with Borneo or Japan.

As regards the supplementing of the single cable between the Philippines and the rest of the world by an alternate route to Borneo, by a cable of 100 miles from Siasi, such action is possible only by partnership with the Eastern Extension Telegraph Company, which possesses exclusive landing rights in North Borneo for many years to come.

An alternate route from Cape Aparri to Formosa, which would undoubtedly benefit Japan and the United States, is possible only through favorable action of the Government of Japan, combined with the consent of the Great Northern Telegraph Company, a Danish corporation holding certain exclusive telegraph rights in Japan.

The growing military importance of cable communication with Asia is strongly evidenced by the extension to the China coast of cable systems entirely within the control of certain governments. England and Russia are now the only nations having direct communication over wires under their control. France has taken such action as insures her communications with Tonkin through cooperation with Russia.

Undoubtedly the most extended system will be that initiated by Germany, which will give practically an all-German route. This system, partly constructed and partly in progress, will cross Asiatic Turkey to the head of the Persian Gulf, thence by cable to Sumatra, over the lines in Dutch East Indies, by cables through South Borneo, Celebes to the Ladrone Islands, and finally a branch cable at Palau connecting with the existing German system on the Chinese coast.

Scarcely second in importance is the Pacific cable installed by Great Britain and its colonies, which by the time this report is in print should be in operation between Australasia and British Columbia, via the Fiji group and Fanning Island.

The United States within the past four years has demonstrated in a manner never before seen by the world the importance of electrical communication in war, and it alone of all nations refrains from install-

ing, operating, and maintaining a submarine cable between this country and our Asiatic possessions. Such a cable in war times, while not costing half as much, would be worth half a dozen war ships, as stated by competent naval authorities. Such a cable, operating at greatly reduced tariff rates, would not only pay good interest on the invested capital, but would greatly facilitate the evolution of American trade in the East by affording speedy and economical facilities to citizens of the United States.

The official experiences of the Chief Signal Officer of the Army show unquestionably that telegraph operators and managers give their first allegiance to corporations, and lastly to their country; this, whether they are American, English, French, Spanish, or of other nationality.

Should there be failure in present negotiations, looking to a commercial trans-Pacific cable under such restrictions as will place that cable thoroughly under American control, whether in peace or in war, the Chief Signal Officer believes that action should then be taken for the construction and installation of an all-American cable, which, in the words of the President's message on that subject, "should remain in the power of the American Government, whether in peace or in war."

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DISTRIBUTION OF WAR DEPARTMENT DOCUMENTS.

Nearly all the publications issued by the War Department are received, temporarily stored, and carefully distributed by this division. About 55,000 documents have been disposed of during the year. This work has been most efficiently performed by the shipping clerk, Mr. F. A. Schneider, and his faithful assistant, both of whom are entitled to great credit for having accomplished such satisfactory results under very unfavorable working conditions.

A. W. GREELY,
Brigadier-General, Chief Signal Officer of the Army.

The SECRETARY OF WAR,
Washington, D. C.

REPORT OF CHIEF OF THE RECORD AND PENSION OFFICE.

RECORD AND PENSION OFFICE,
War Department, October 1, 1902.

SIR: The number of cases received and disposed of by the Record and Pension Office during the fiscal year ended June 30, 1902, was as follows:

From the Pension Office	100,201
From the Auditor for the War Department	26,701
Remuster cases	3,081
Desertion cases	2,353
All other cases, miscellaneous	36,686
Total	169,022
On hand June 30, 1902	None.

Of the pension cases referred to, 3,272 were calls from the Commissioner of Pensions for statements of service and medical or surgical

treatment of officers and enlisted men of the Philippine insurrection or for specific information relative to their service or status; 18,276 were similar calls from the same official for information relative to Spanish war volunteers, and 78,653 were calls for military histories of former members of volunteer organizations in service during the civil war or other wars preceding the war with Spain.

The cases received from the Auditor for the War Department were calls for information relative to the military service or status of officers and enlisted men of the volunteer forces. Of these calls 6,253 related to service in the Philippine insurrection, 5,128 to service in the war with Spain, and 15,320 to service in prior wars, principally in the war of the rebellion.

Notwithstanding the questions constantly arising relative to the status of members of the recently disbanded forces, and equally intricate questions relative to service in the earlier wars, all of which require careful administrative action, the business of the office has been promptly dispatched, nearly 93 per cent of the cases received during the fiscal year having been disposed of within twenty-four hours from the time they reached the office, and at the close of business on the 30th of June not one case remained unacted upon.

REMUSTER.

The statistical table shows an increased number of applications received during the fiscal year for "remuster," or recognition of rank as commissioned officers, under the provisions of the act of February 24, 1897, for "the relief of certain officers and enlisted men of the volunteer forces." That act applies only to persons commissioned as officers of the volunteer forces during the civil war.

The practice of the Department in this class of cases has been modified to some extent during the past year by the adoption by the Secretary of War of the construction placed upon some provisions of the law by the Attorney-General of the United States and the Judge-Advocate-General of the Army.

REMOVAL OF CHARGES OF DESERTION.

The number of applications for removal of charges of desertion under the act of March 2, 1889, and the acts amendatory thereof, is gradually diminishing. These acts relate exclusively to regular and volunteer soldiers of the civil war and the war with Mexico. But few applications for removal of the charge of desertion have been received from members of volunteer organizations in service during the Spanish war and the Philippine insurrection. In the few cases received in which it is clearly shown by the records that the charge is erroneous a notation has been made declaring the erroneous character of the charge, thus relieving the soldier from the effects of an unjust accusation. It is, however, a well-established rule of the Department that in the absence of legislation requiring it ex parte testimony can not be accepted to invalidate the records of disbanded organizations in cases where the records do not themselves afford reasons for questioning their accuracy.

MISCELLANEOUS CASES.

The miscellaneous or unclassified cases mentioned in the statistical table, the character of which has been described in previous annual

reports, are of great variety, including an extensive correspondence with individual members of both Houses of Congress and the large number of reports furnished the various Congressional committees. During the last fiscal year 4,170 inquiries were received from Senators and Members of the House of Representatives, embracing a great variety of subjects, and 516 reports were made in response to calls from Congressional committees for information and advice on subjects of pending or proposed legislation.

INFORMATION INFORMALLY FURNISHED OTHER BUREAUS.

In addition to the classified and unclassified cases mentioned in the statistical table, many cases are annually received and disposed of by the Record and Pension Office of which no formal record is kept. Among these may be mentioned calls from the Quartermaster-General of the Army for information from the records for use in the adjudication of claims under the act of February 3, 1879, and subsequent acts, for headstones to mark the graves of deceased volunteer soldiers; calls from the Adjutant-General of the Army for the records of former officers of volunteers applying for appointment in the Regular Army or to determine the relative rank of those already appointed in the regular establishment, and calls from the Adjutant-General for the records of former volunteer soldiers with a view to their enlistment in the Regular Army or to establish their title to longevity pay.

The informal calls from the Quartermaster-General received and answered during the last fiscal year numbered 10,133, and it is estimated that 3,500 such informal calls from the Adjutant-General were received and answered during the same period.

CLAIMS OF PAROLED CONFEDERATE OFFICERS AND ENLISTED MEN.

A new class of cases has recently arisen, the adjudication of which by the War Department involves a search of the records of the Record and Pension Office. The cases referred to are the claims arising under the act of Congress approved February 27, 1902, authorizing the payment of artillery and cavalry officers and private soldiers of the Confederate army, or their heirs, for horses, side arms, and baggage alleged to have been taken from such officers and enlisted men by Federal troops at and after the surrender at Appomattox, in violation of the terms of surrender of the Confederate armies. These claims are, under the terms of the law, investigated and determined by the Quartermaster-General of the Army, under the supervision of the Secretary of War, but the necessary investigation requires in each case a search of the records of this office for such information as the records afford relative to the capture and parole of the individual officer or enlisted man, the taking of his personal property, and the orders under which the property was taken. The search necessary in these cases is extensive and involves the expenditure of considerable time and labor. From the date of the approval of the act to the end of the fiscal year, a period of four months, calls were received from the Quartermaster-General for information in the cases of 302 individual claimants under the act referred to.

TERMINATION OF SERVICE OF VOLUNTEERS, PHILIPPINE INSURRECTION.

The act of March 2, 1899, under which the volunteer regiments in service during the Philippine insurrection were organized, contained the proviso that the volunteer forces to be raised under its authority should continue in service only during the existence of the necessity therefor, and "not later than July 1, 1901." In accordance with this provision of the law, enlistments were made "for the period ending June 30, 1901, unless sooner discharged by proper authority."

Orders were issued by the War Department directing the muster out of officers and enlisted men on or before June 30, 1901, but, through exigencies that could not be avoided, the muster out of several regiments and parts of regiments was delayed and did not actually take place until several days after the date to which the employment of volunteers was authorized by the act. A question soon arose as to the status of the officers and enlisted men whose muster out was thus delayed, and as to the status of an officer whose regiment was mustered out within the prescribed limit of time, but who claimed to have been himself retained in service after July 1, 1901, by competent authority. It was decided by the Secretary of War, concurring in the opinion of the Judge-Advocate-General of the Army, that the terms of service of the officers and enlisted men of the volunteer forces called into service under the act of March 2, 1899, who were in service July 1, 1901, were terminated on that date by the mandatory operation of section 12 of the act referred to, and that in the absence of remedial legislation it can not be held that such officers and enlisted men were legally in the military service of the United States after July 1, 1901.

JURISDICTION OF COURTS-MARTIAL.

Questions have also arisen as to the status of officers and enlisted men of the volunteer forces, under a recent decision of the Supreme Court of the United States that the court-martial by which a certain volunteer officer was tried was without jurisdiction, the court having been composed in part of officers of the Regular Army, in contravention of the seventy-seventh article of war, and that the sentence imposed was, for that reason, void and inoperative. This decision affects the status of a considerable number of officers and enlisted men of the volunteer forces in service during the Spanish war and the Philippine insurrection.

In the case of a volunteer officer in service during the Philippine insurrection, under a Presidential appointment, who was sentenced by such an illegal court-martial to dismissal from the service and whose successor was appointed by the President and confirmed by the Senate, the following questions presented themselves: (1) On what date was the officer separated from the military service of the United States? (2) What was the cause of his separation from the service? (3) What was his official status on the date of his separation from the service? (4) Was his separation from the service honorable, not honorable, or dishonorable?

It was decided by the Acting Secretary of War, concurring in an opinion of the Acting Attorney-General of the United States, that the officer was discharged from the service on the date from which

his successor was to take rank by the terms of his appointment and that his discharge was by reason of the appointment of his successor; and, concurring in an opinion of the Judge-Advocate-General of the Army, that the officer's status at the date of his discharge was that of an officer under charges, and that the discharge, though not of the dishonorable character attaching to a dismissal by sentence of court-martial, was nevertheless a discharge without honor.

In the case of a volunteer enlisted man of the Spanish war, sentenced by an illegal court-martial to be dishonorably discharged and to be confined at hard labor for a term of years, it was decided by the Acting Secretary of War, concurring in an opinion of the Judge-Advocate-General, that the soldier was continued in service to the date of the muster out of his company and was discharged on that date, without honor, by reason of the muster out of the organization to which he belonged.

CERTIFICATES IN LIEU OF LOST DISCHARGES.

During the last session of Congress, by an act approved July 1, 1902, the Secretary of War was authorized to furnish to any honorably discharged officer or enlisted man who has lost his certificate of discharge, or whose discharge certificate has been destroyed without his privity or procurement, or to the widow of such officer or enlisted man, a certificate in lieu of his original discharge certificate, upon the condition that the certificate in lieu of the original lost or destroyed discharge certificate "shall not be accepted as a voucher for the payment of any claim against the United States for pay, bounty, or other allowances, or as evidence in any other case."

This act is in effect an extension of the provisions of the act of March 3, 1873 (reenacted in section 224 of the Revised Statutes), in which, under the same conditions as to the loss or destruction of their original discharge certificates, but without limitation as to character of discharge, the Secretary of War was authorized to issue duplicate certificates of discharge to enlisted men of the war of the rebellion. The act of 1873 did not, however, authorize the issue of such certificates to commissioned officers of the civil war, or to officers or enlisted men of any other war, or to the heirs of deceased officers or enlisted men, and in this respect the new law is far more comprehensive than the old, including as it does among its beneficiaries not only the honorably discharged enlisted men of the civil war, but also the honorably discharged officers and enlisted men at any time in the military service of the United States and the widows of those who are deceased.

Many thousands of certificates have been issued under the act of March 3, 1873, and there appears to be no diminution in the number of applications for such certificates, 87,621 having been received since the organization of the Record and Pension Office, and 6,108 having been received and acted upon during the last fiscal year.

Considerable labor is involved in the consideration of these applications, proof being required by the statute as to the loss or destruction of the original discharge certificate, and satisfactory evidence of the identity of the applicant being also required in each case as a preliminary to the issue of a new certificate of discharge.

MEDALS OF HONOR.

In the last annual report of this office considerable space was given to the subject of the issue of medals of honor. It was shown in that report that up to June 30, 1901, 2,023 Congressional medals had been awarded to officers and enlisted men of the volunteer forces. Those awards were all on account of service rendered during the civil war. During the last fiscal year 58 applications were received for the award of medals of honor to survivors of the civil war, but none of these applications was favorably considered by the Secretary of War. No applications were received at this office during the same period in behalf of Spanish war volunteers, and no awards were made. Twenty-one medals were awarded during the fiscal year to members of the volunteer organizations in service during the Philippine insurrection.

A board of officers has recently been convened by the Acting Secretary of War to consider all applications for the award of medals of honor. Under the orders of the Acting Secretary of War all such applications in behalf of officers and enlisted men of the volunteer service are received and recorded in the Record and Pension Office, where all necessary action is taken to prepare them for decision and whence they are submitted to the Secretary of War after having received the indorsements and recommendations of the medal of honor board. After the decision of the Secretary of War is made the further necessary action is taken by the Record and Pension Office.

PUBLICATION AND DISTRIBUTION OF THE OFFICIAL RECORDS OF THE UNION AND CONFEDERATE ARMIES.

At the date of the last annual report the publication of the Official Records of the Union and Confederate Armies had been virtually completed, the text of the general index being then in the hands of the Public Printer. The printing and distribution of the general index has since been completed, and the great work of publishing such of the records of the civil war as are of general historic interest is finished.

The general character and scope of the work were described in the last annual report, and a brief history of the work is published in the preface to the final volume, the general index before referred to. This volume also contains a synopsis of the contents of the several preceding volumes, including a summary of the principal operations covered by each; a special index showing the volumes containing reports and correspondence relating to the principal armies, military divisions, departments, and army corps; and a table of contemporaneous operations, indicating the volumes containing documents relating to events and operations in each month from December, 1860, to the end of the war.

The general index also contains a table of "Additions and Corrections," in which the errors and omissions discovered after the publication of the different volumes are corrected or supplied. These additions and corrections have also been printed in pamphlet form for each volume, to be inserted in the volumes to which they relate, and these pamphlets will be supplied to all persons, libraries, and organizations on the distribution list.

The distribution of the small editions of the publication authorized by special provisions of law for the use of members of Congress was completed during the year, with the exception of a few sets remaining

to the credit of members of the Fifty-sixth Congress who have not as yet designated the persons to whom the volumes shall be sent.

Sixteen thousand two hundred and thirty-nine books were received from the Public Printer during the fiscal year, and 48,007 books were distributed. The pamphlet edition of the "Additions and Corrections," before referred to, numbering 781,000 separate slips or pamphlets, was also received from the Public Printer. These pamphlets are now in process of distribution.

The sum of $811.65 was received during the fiscal year as the result of the sale of books and maps, all of which was deposited in the United States Treasury as required by law.

INDEX-RECORD CARD WORK.

At the date of the last annual report the work of reproducing, by the index-record card system, the records relating to the personnel of the Revolutionary armies, and of the volunteer forces of the United States in service during the subsequent wars preceding the war with Spain, had been virtually completed, the records of the war with Spain had been carded, with the exception of some of the delayed medical records, and the work of carding the medical records of the Philippine insurrection had been begun.

During the last fiscal year the carding of the Spanish war records and the medical records of the Philippine insurrection was completed, and the reproduction of the military records of the Philippine insurrection was begun and prosecuted with such success that at the close of the year the work was well advanced and is now rapidly approaching completion.

As intimated in previous reports, much remains to be done in the reproduction of the miscellaneous records of the various wars. A portion of the clerical force was employed during the last fiscal year in carding these records, but with the completion of the carding of the records of the Philippine insurrection a larger number of clerks will be available for this purpose.

The index-record card work of the last fiscal year included the preparation of 677,267 military cards and 216,485 medical cards, making, with the number prepared in previous years, a total of 43,059,174 of the former and 7,776,929 of the latter class, aggregating 50,836,103 index-record cards prepared up to and including June 30, 1902.

RECORDS OF THE REVOLUTIONARY WAR AND WAR OF 1812.

As mentioned in previous reports, the Congressional enactments directing the transfer of the records of the Revolutionary war and the war of 1812 from other Executive Departments to the War Department required that they should be "properly indexed and arranged for use," and that they should also be "prepared for publication."

By the application of the index-record card system these records have been "indexed and arranged for use," but no further preparation has been made for their publication, and it is not deemed advisable to undertake the publication of any portion of the records of the Revolutionary war until the War Department collection shall be more nearly complete than it has heretofore been possible to make it.

The Revolutionary records in the possession of some of the States

have been loaned to this Department, and, after being copied, have been returned to their former custodians. It is expected that the collection of such records filed in this Department will be further augmented in the same manner. But until the work of reproducing the records of the more recent wars shall have been completed and the pressure of current business shall have been somewhat relaxed, it will be impracticable to enter seriously upon the task of completing the file of Revolutionary records or of undertaking the publication of the records of either the war of the Revolution or the war of 1812. No specific authority for the publication of either class of these records has yet been granted by Congress, but the requisite legislative authority for their publication will doubtless be given, and the necessary appropriation made, as soon as the Department is prepared to enter upon the work.

CONFEDERATE ARCHIVES.

The Confederate archives filed in this office, though by no means complete, are of great volume, and relate to all branches of the late government of the Confederate States, legislative, executive, and judicial. Most of these records were seized by the military authorities upon the capture of the Confederate capital, and were transmitted to the War Department in 1865 for preservation. They were augmented by subsequent captures, by donations, and by purchase. They are of great historic value, and perhaps of still greater practical value as evidence in the determination, by the courts and the Executive Departments of the Government, of claims against the United States. For the latter purpose they are in constant demand, especially in cases heard by the Court of Claims, and as to their competency as evidence it was held by the Supreme Court of the United States in 1899 (Oakes *v.* U. S., 174 U. S., 778), Mr. Justice Miller delivering the opinion of the court, that although the government of the Confederate States was in no sense a government de jure, and was never recognized by the United States as in all respects a government de facto, its records, collected and preserved by the United States at great expense, or duly certified copies of them, are admissible in a court of justice.

CLERICAL FORCE.

As a result of the adoption of improved business methods, and especially because of the application of the index-record card system to the military and medical records, the clerical force of the Record and Pension Office has been greatly reduced since the organization of the office as a bureau of the War Department, a reduction of 300 having been made in 1894, 50 in 1895, 25 in 1897, 32 in 1900, and 42 for the present fiscal year. The total reductions in the clerical force have resulted in an annual saving of $501,540 in salaries alone.

Very respectfully,

F. C. AINSWORTH,
Brigadier-General, U. S. A.,
Chief, Record and Pension Office.

The SECRETARY OF WAR.

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REPORT OF THE CHIEF OF ENGINEERS.

OFFICE OF THE CHIEF OF ENGINEERS,
UNITED STATES ARMY,
Washington, September 29, 1902.

SIR: I have the honor to present for your information the following report upon the duties and operations of the Engineer Department for the fiscal year ending June 30, 1902:

OFFICERS OF THE CORPS OF ENGINEERS.

The number of officers holding commissions in the Corps of Engineers, United States Army, at the end of the fiscal year was 150.

Since the last annual report the Corps of Engineers has lost one of its officers—Capt. James J. Meyler, who died on Dec. 12, 1901.

There were added to the Corps of Engineers, by transfer from the line of the Army, three first lieutenants on March 7, 1902, and one on April 9, 1902, to date from January 18, 1902, with rank from February 3, 1901, and nine second lieutenants on March 7, 1902, to date from January 18, 1902, with rank from February 2, 1901, to fill original vacancies, under the provisions of section 22 of the act of Congress approved February 2, 1901, and by promotion of graduates of the Military Academy, 7 second lieutenants on June 30, 1902, to rank from June 12, 1902. Five of the second lieutenants transferred on March 7, 1902, were promoted to first lieutenants on March 10, 1902, to fill existing vacancies in the Corps of Engineers.

On the 30th of June, 1902, the officers were distributed as follows:

TABLE I.

Commanding the Corps of Engineers and Engineer Department, and Board of Ordnance and Fortification	1
Office of the Chief of Engineers and Light-House Board	1
Office of the Chief of Engineers	5
Division Engineer, fortifications, river and harbor works, and Light-House Board	1
Division Engineer and The Board of Engineers	1
Fortifications and river and harbor works	15
Division Engineer, river and harbor works, and The Board of Engineers	1
Division Engineer, river and harbor works, and light-house district	1
Division Engineer, Mississippi River Commission, Missouri River Commission, and light-house district	1
Division Engineer, river and harbor works, and engineer officer, Department of the Lakes	1
Division Engineer, California Débris Commission, and engineer officer, Department of California	1
Light-House Establishment	5
The Board of Engineers and International Congress	1
Washington Aqueduct	2

River and harbor works	13
Division Engineer, fortifications, river and harbor works, and California Débris Commission	1
River and harbor works and light-house districts	2
Fortifications and light-house district	1
Division Engineer, Mississippi River Commission, fortifications, and river and harbor works	1
Division of the Philippines	25
Missouri River Commission, fortifications, and river and harbor works	1
Fortifications, river and harbor works, and light-house districts	4
Post of Fort Leavenworth, First Battalion of Engineers, and engineer officer, Department of the Missouri	1
Post of Washington Barracks, Engineer School of Application, and Third Battalion of Engineers	15
Survey of Northern and Northwestern lakes	1
Mississippi River improvement	3
Mississippi River Commission, Missouri River Commission, and river and harbor works	1
Public buildings and grounds, District of Columbia	1
Engineer Commissioner, District of Columbia	1
Cuban affairs	2
Post of Washington Barracks and Engineer School of Application	2
Post of Fort Leavenworth and First Battalion of Engineers	14
River and harbor works, Yellowstone National Park, and Fort Washakie military road	1
Fortifications, river and harbor works, and Board of Ordnance and Fortification	1
United States Military Academy	5
Assistants to Engineer Commissioner, District of Columbia	2
Fortifications, river and harbor works, and engineer officer, Department of Texas	1
Mississippi River improvement, light-house district, river and harbor works, and Vicksburg National Military Park	1
Post of Washington Barracks, Engineer School of Application, and engineer officer, Department of the East	1
Buildings for Government Printing Office, War College, and Washington Barracks	2
California Débris Commission	1
Engineer depot at Willets Point and the Board of Engineers	1
Adjutant-General's Office, United States Army	1
Graduating leave	7
	150

As shown by the above table, the duties devolving upon the Corps of Engineers are greater now than ever before in its history, and year after year they have been increasing.

These duties now include the command of three battalions of troops, the expenditure of about $3,000,000 appropriated by Congress for fortifications and kindred work, of over $80,000,000 appropriated for river and harbor work; the construction and repair of the entire light-house system of the country; the water supply, the municipal engineering, and a share in the city government of the capital of the United States; the improvement of the Yellowstone National Park; the survey of the Northern and Northwestern lakes; and the mining and débris commission in the State of California. In addition, the Chief of Engineers is ex officio a member of the War College Board, a member of the Board of Ordnance and Fortification, and of other important boards and commissions.

The act of February 2, 1901, increased the organization of the Corps of Engineers from 127 officers to 160, and the enlisted strength from one battalion to three battalions. The increase of officers was made up of 5 captains, 10 first lieutenants, and 18 second lieutenants.

The extra battalions of enlisted men called for continuous and exclusive services of the following officers, in addition to those serving with the original battalion:

Two majors, 8 captains, 12 first lieutenants, and 8 second lieutenants.

The following table shows the effect actually produced by the act above mentioned upon the number of officers of engineers available for the performance of their varied and important duties.

TABLE II.

Rank.	Increase of number of officers.	Increase of number of officers required for command of troops.	Gain as regards general duties of the corps.	Loss as regards general duties of the corps.
Majors	.....	2	.....	2
Captains	5	8	.....	3
First lieutenants	10	12	.....	2
Second lieutenants	18	8	10	.....
Total	33	30	10	7

The net result is the loss of 7 officers from the most effective grades for active control of works calling for severe physical exertion, and the gain of 10 officers in the grade of second lieutenant, who, by reason of youth and inexperience, must undergo a period of training and instruction before they become capable of assuming the responsibilities of independent commands.

A most serious effect of the reorganization of February 2, 1901, was to further materially reduce the already too slow rate of promotion for all officers hereafter joining the corps. From 1866 to 1901 the ratio of field officers in the Corps of Engineers to the total number was 39 per cent, which resulted in a satisfactory rate of promotion as compared with the Army at large; by the reorganization this ratio was reduced to 31 per cent, increasing materially the length of service required before reaching the grade of major. It is believed to be but simple justice that the numbers of the various grades be so readjusted as to return to the ratio of field officers in effect for thirty-five years, and that the field officers be proportioned among the grades of colonel, lieutenant-colonel, and major as nearly as practicable in the ratio adopted for the other staff corps, that is 1—1½—3, which would provide, without increasing the number of officers now authorized by law, the following organization, which is recommended: One brigadier-general, 12 colonels, 16 lieutenant-colonels, 34 majors, 40 captains, 40 first lieutenants, 17 second lieutenants.

At the present time there are 20 officers below the rank of major who have charge of very important engineering duties, including large river and harbor and fortification works; the many duties of the corps make the assignment of such junior officers to such positions unavoidable. The work performed, as well as length of service and experience, entitles these officers to the increased rank and emoluments which a return to former ratios would partially grant. Experience in civil as well as in military life has long since proved the evil effect of imposing labors and responsibilities out of proportion to the amount of compensation paid for work to be done.

THE BOARD OF ENGINEERS.

The regulations for the government of the Corps of Engineers provide for a Board of Engineers, consisting of not less than three officers, designated by the Chief of Engineers with the sanction of the Secretary of War. This Board acts in an advisory capacity to the Chief of Engineers upon important questions of engineering. One of its principal duties is to plan or revise the projects for permanent fortifications of the United States.

Owing to the intimate relations in regard to defenses existing between the Corps of Engineers, the Ordnance Department, and the Artillery Corps, it was deemed expedient during the year to add an ordnance officer to the Board, in addition to the artillery officer added last year, for service whenever the preparation of plans of defense was under consideration. The actual detail was not made before July 1, 1902.

The composition of this Board and its operations during the past fiscal year are given in its report.

(See Appendix No. 1.)

BOARD ON TORPEDO SYSTEM.

This Board was dissolved during the year and its records sent to the Artillery School of Submarine Defense at Willets Point. The transfer of the torpedo defenses to the artillery, by act of February 2, 1901, rendered the further continuance of the engineer board unnecessary.

FORTIFICATIONS.

The scheme of national defense upon which work has now been in progress since 1888 is based upon a report dated January 16, 1886, submitted by the Board on Fortifications or other Defenses, popularly known as the Endicott Board. This Board indicated the localities where defenses were most urgently needed; determined the character and general extent of the defenses, with their estimated cost; and recommended for first consideration the names of 27 principal ports, arranged in the order of their importance.

At the time of its report the coasts of the United States were undefended, except by obsolete ordnance mounted in old-style masonry forts incapable of coping even with the ships of that day; and the manufacture of armor and modern seacoast guns and carriages in the United States had not yet been entered upon or designs therefor perfected.

The first act of Congress designed to carry out the recommendations of the Endicott Board was approved September 22, 1888. It created the Board of Ordnance and Fortification and made appropriations for beginning the manufacture of modern seacoast ordnance, but made no provision for the construction of batteries. The first appropriation for the construction of gun and mortar batteries was contained in the act of August 18, 1890, since which time appropriations of varying amounts have been made regularly each year for carrying forward the adopted scheme of coast defense for the manufacture of ordnance, for the construction of batteries, and for torpedo defenses.

From time to time the defensive details for each locality have been carefully elaborated in projects prepared by The Board of Engineers, and in each case these projects have received the formal approval of the Secretary of War prior to the actual beginning of work. Up to the present time projects for permanent seacoast defenses have been adopted for 31 localities in the United States, as follows:

1. Penobscot River, Maine.
2. Kennebec River, Maine.
3. Portland, Me.
4. Portsmouth, N. H.
5. Boston, Mass.
6. New Bedford, Mass.
7. Narragansett Bay, Rhode Island.
8. Eastern entrance to Long Island Sound.
9. New York, N. Y.
10. Delaware River.
11. Baltimore, Md.
12. Washington, D. C.
13. Hampton Roads, Virginia.
14. Entrance to Chesapeake Bay at Cape Henry.
15. Wilmington, N. C.
16. Charleston, S. C.
17. Port Royal, S. C.
18. Savannah, Ga.
19. St. Johns River, Florida.
20. Key West, Fla.
21. Tampa Bay, Florida.
22. Pensacola, Fla.
23. Mobile, Ala.
24. New Orleans, La.
25. Sabine Pass, Tex.
26. Galveston, Tex.
27. San Diego, Cal.
28. San Francisco, Cal.
29. Columbia River, Oregon and Washington.
30. Puget Sound, Washington.
31. Lake Champlain.

In addition to the above localities, the defense of the Great Lakes and the St. Lawrence River is under consideration.

Projects for the defenses for Porto Rico, Hawaii, Guam, Manila, and Subig Bay have been approved by the Secretary of War, and actual construction should begin thereon at an early day. It is believed that the time has come when it will be no longer possible to ignore the question of the insular defenses. The Navy Department is properly insistent that all its important coaling stations should receive proper defensive protection to keep off predatory attacks from possible hostile fleets.

In view of modern changes in the methods of ordnance and ship construction, the degree of defense to be provided for coaling stations, scattered all over the world, for the larger naval bases which must be promptly established and for which appropriations are asked of Congress by the Navy Department, for the ports of Manila, Pearl Harbor, and Honolulu, and for the lake ports and the St. Lawrence River, should be determined by a tribunal similar to the Endicott Board. This tribunal should be created for the purpose by Congress, and, like the Endicott Board, should, it is suggested, include the Secretary of War, the chiefs of Engineers, Ordnance, and Artillery, one high ranking officer of each of those branches of the service, two naval officers of high rank, and two civilians expert on the subject of our foreign commercial relations.

Nearly fifteen years have elapsed since the adopted scheme of coast defense was formulated by the Endicott Board. At that time the rapid-fire gun was in its infancy, and ships were characterized by extremely heavy guns and great thickness of armor. With the development of the rapid-fire gun and the increase in the resisting powers of armor a material change has taken place in ship construction, necessitating corresponding changes in the details of coast defenses. In accordance with the recommendations of the Endicott Board, the earlier detailed projects contemplated mounting a considerable number of the heaviest guns at the more important harbors in armored works. The tendency toward a reduction in caliber of heavy ordnance and the adoption of a disappearing carriage for the 12 inch gun has, up to the present time, enabled the United States to avoid costly experiments in armored turrets, cupolas, and casemates, which have been forced on European nations by their struggle for military and commercial supremacy. No definite numbers or calibers of rapid-fire guns were assigned in the earlier projects, but subsequent revisions have resulted in a regular programme for rapid fire armament, a reduction in the

number and caliber of heavy guns, a reduction in the number of mortars, and a general elimination of armored defenses. Marked economies have thus been secured without any sacrifice of defensive requirements. As ships and naval ordnance change, further revision will be necessary.

The first appropriation for constructing gun and mortar batteries was made in 1890, but it was not until 1896 that appropriations commensurate with the magnitude of the undertaking were made. The seacoast defenses of the United States are now somewhat more than 50 per cent completed; 25 of the principal harbors of the United States have a sufficient number of heavy guns and mortars mounted to permit an effective defense against naval attack, and during the past two years considerable progress has been made in the installation of an adequate rapid-fire armament, now the matter of first importance.

Gun and mortar batteries.—The existing projects for seacoast defenses comprise 356 heavy guns of 8-inch, 10-inch, and 12-inch calibers, 1,294 rapid-fire guns from 2.24-inch to 6-inch caliber, and 544 mortars. The total cost for the engineering work is estimated at $50,000,000, including what has been completed as well as what remains to be done.

Since the act of May 25, 1900, the wording of the fortification acts has not permitted the construction of any mortar batteries. During the summer of 1901 a series of tests was made by actual firing of the mortars in Fort Preble, Portland Harbor, Maine. The results were most satisfactory, and conclusively proved the usefulness of these pieces even against moving ships at ranges between 3,000 and 9,000 yards. Subsequent target practice has shown them to be accurate and effective up to 11,000 yards, and extreme ranges of 12,000 yards have been successfully used. The mortar possesses the advantage that it can be directed to hit any point within its limits of range. Intervening high or wooded land does not affect its searching fire if outlying range-finding stations are so provided as to permit the water areas to be seen. If an advanced gun battery is captured it can be instantly made untenable by mortar fire from any point within range. At most of the harbors all the mortars that are needed have been emplaced, but at a few localities additional mortar batteries are still esssential. It is considered exceedingly desirable that future appropriation acts be so worded as to permit the expenditure of such limited funds as may be necessary in completing the provisions for mortar defense.

Since the inauguration of the present system of coast defense the several appropriations made by Congress for the construction of gun and mortar batteries have been as follows:

Act of—		Act of—	
August 18, 1890	$1,221,000.00	May 7, 1898	$3,000,000.00
February 24, 1891	750,000.00	July 7, 1898	2,562,000.00
July 23, 1892	500,000.00	March 3, 1899	1,000,000.00
February 18, 1893	50,000.00	May 25, 1900	2,000,000.00
August 1, 1894	500,000.00	March 1, 1901	1,615,000.00
March 2, 1895	500,000.00	June 6, 1902	2,000,000.00
June 6, 1896	2,400,000.00		
March 3, 1897	3,841,333.00	Total	25,757,009.02
Allotments from the appropriation for "National Defense," act of March 9, 1898	3,817,676.02		

The foregoing table does not include $306,540.80 allotted and expended during the war with Spain from the appropriation for "National Defense" for the construction, on the Atlantic and Gulf coasts, of a number of earthen batteries which have since been abandoned; nor an appropriation of $992,000 for reconstruction and repair of the fortifications to protect the harbor of Galveston, Tex., made to replace the works injured or destroyed in the hurricane which wrecked the city of Galveston on September 8, 1900.

The total number of seacoast guns and carriages for which the Chief of Ordnance reports his Department has made provision, and the corresponding permanent emplacements for which the Engineer Department has made provision with the funds appropriated for construction of gun and mortar batteries, including allotments from the appropriation for "National Defense," are shown in the following table:

Type of gun carriage.	Total carriages provided.	Total emplacements provided.
12-inch mortar carriages, model 1896	[a]306	296
12-inch mortar carriages, model 1891	[b]85	80
12-inch disappearing carriages, L. F., model 1901	11	11
12-inch disappearing carriages, L. F., model 1897	35	35
12-inch disappearing carriages, L. F., model 1896	27	27
12-inch gun-lift carriages, altered to nondisappearing	3	3
12-inch gun-lift carriages, model 1891	2	2
12-inch nondisappearing carriages, model 1892	[c]28	27
10-inch disappearing carriages, A. R. F., model 1896	3	3
10-inch disappearing carriages, L. F., model 1901	8	8
10-inch disappearing carriages, L. F., model 1896	74	74
10-inch disappearing carriages, L. F., model 1894	35	35
10-inch nondisappearing carriages, model 1893	[d]11	10
8-inch disappearing carriages, L. F., model 1896	38	40
8-inch disappearing carriages, L. F., model 1894	26	26
8-inch nondisappearing carriages, model 1892	[e]9	[f]9
15-inch smoothbore carriages altered for 8-inch rifles	21	[g]21
6-inch disappearing carriages, model 1898	29	29
6-inch rapid-fire (Vickers Son & Maxim), pedestal mounts	8	8
6-inch, mount not determined upon	2	2
6-inch rapid-fire, pedestal mounts, model 1900	88	88
5-inch balanced-pillar mounts, model 1896	32	32
5-inch pedestal mounts	21	21
4.7-inch rapid-fire (Armstrong pattern), pedestal mounts	34	34
4.7-inch rapid-fire (Schneider pattern), pedestal mount	1	[h]1
4-inch rapid-fire (Driggs-Schroeder), pedestal mounts	4	4
3-inch balanced-pillar mounts	118	118
3-inch casemate mounts	2	2
3-inch pedestal mounts	74	74
2.24-inch rapid-fire field carriages and rampart mounts	70	([i])

[a] The number of carriages of this type provided for exceeds by 10 the number which the Chief of Engineers has notified the Chief of Ordnance are required for the emplacements he has provided.
[b] One in use at West Point; four in storage.
[c] One in use at Sandy Hook Proving Ground.
[d] One at Sandy Hook Proving Ground.
[e] One at West Point and one at Sandy Hook Proving Ground.
[f] Five temporary; armament removed from 3.
[g] Temporary; armament removed from 16.
[h] Temporary.
[i] Movable mounts.

The foregoing table shows that up to the present time provision has been made for emplacing 331 heavy guns, 483 rapid-fire guns, and 376 12-inch mortars.

During the fiscal year just closed operations were carried on with unexpended balances of the appropriations carried by the regular fortification appropriation acts approved May 25, 1900, and March 1, 1901. The number of emplacements provided for under each of the foregoing acts is exhibited in previous annual reports. Under the

fortification act of June 6, 1902, it is proposed to provide emplacements for the following number of guns:

12-inch.	10-inch.	6-inch.	15-pounder.
2	4	74	52

The total number of emplacements of every kind provided for to date by all appropriations is as follows:

12-inch.	10-inch.	8 inch.	Rapid-fire.	12-inch mortars.
105	130	96	483	376

In this total are included seventy 2.24-inch rapid-fire guns on movable mounts not requiring permanent emplacements, temporary emplacements for twenty-one 8-inch B. L. rifles on modified 15-inch carriages; one temporary emplacement for 4.7-inch rapid-fire gun, and five temporary emplacements for 8-inch guns on barbette carriages. The foregoing temporary emplacements were built during the war with Spain from the "National Defense" funds. The 8-inch guns will be transferred from time to time to permanent emplacements as these are completed, and a number of them have already been so transferred. While it is proposed eventually to disarm these temporary emplacements, they can again be used in case of emergency, and have for this reason been included in the foregoing enumerations.

The deficiency act of July 7, 1898, provided funds for mounting twenty-five each of 5-inch and 6-inch Brown segmental wire-wound rapid-fire guns on navy-pattern mounts. Twenty-one emplacements for the 5-inch guns were completed before the contractors for the wire-wound guns and their carriages failed. No emplacements for the 6-inch guns were built, as the contractors never even completed the drawings for the guns. In the last fortification act Congress provided funds for the construction of twenty-one 5-inch rapid-fire guns to be mounted in these emplacements, and the Ordnance Department is now designing the guns and mounts to fit the emplacements which were built for the twenty-one wire-wound 5-inch guns.

The status of emplacements for which funds have been provided by Congress is as follows at the close of the fiscal year:

	12-inch.	10-inch.	8-inch.	Rapid-fire.	12-inch mortars.
Guns mounted	80	112	[a] 89	[b] 108	297
Ready for armament	16	3	5	[c] 229	55
Under construction	9	15	2	146	24
Total	105	130	94	483	376

[a] Nineteen of these, which had been mounted temporarily, have since been dismounted.
[b] One temporarily.
[c] Including seventy 6-pounders not requiring permanent emplacements.

At the close of the previous fiscal year there were reported mounted:

12-inch.	10 inch.	8-inch.	Rapid-fire.	12-inch mortars.
72	112	86	88	263

A comparison of the last two tables shows an addition during the year to the completed seacoast armament of eight 12-inch guns, three 8-inch guns, twenty rapid-fire guns, and thirty-four mortars.

At the beginning of the year all contract works authorized under act of June 6, 1896, had been completed, except the contract let on December 24, 1900, to L. L. Leach & Son, of Chicago, Ill., for the completion of a gun battery and a mortar battery at Key West, Fla. They had an extension of time and finally failed, and their contract was annulled. This makes ten extensions of time and two annulments of contract at this one locality. The work will now be done by hired labor, the increase in cost, if any, being charged to the contractors' bondsmen, under the terms of the contract.

For continuing the work of construction of gun and mortar batteries in accordance with approved projects an estimate of $4,000,000 is submitted.

Dynamite batteries.—During the fiscal year the Secretary of War directed the sale of the obsolete dynamite guns, and no further reports upon dynamite batteries will be submitted.

Range and position finders.—During the year satisfactory progress has been made in systematizing the whole matter of fire control. The utmost harmony has existed between the Chief of Engineers, the Chief of Ordnance, the Chief Signal Officer, and the Chief of Artillery, all of whose departments are involved in the work. This Department has taken the position that as the fire control is a purely tactical problem, the space required in the observation rooms, the height and degree of protection against projectiles, and the relative order in which the various forts and batteries should be equipped are subjects for the Artillery Corps to determine; that the province of the Engineer Department is to construct the shelters, towers, electric ducts, etc.; and that the Signal Corps is to install the telephones, telautographs, and other means of electrical communication, the power and lighting current used in connection with the telautographs being supplied from the engineer plants installed in the batteries. The Chief of Ordnance, by law, supplies the range-finding instruments themselves. Where the stations are located on naturally high ground there has been no delay in the completion of the engineer work, but where high steel towers are called for, the condition of the steel market has been such as to prevent rapid work. In most cases the towers have to be erected at inaccessible localities, and the total cost of each is so small that large firms will not bid for their construction, while smaller firms can not secure the rolled steel shapes from the mills without long delays.

At the present time 9 fire commanders' and 45 battery commanders' stations have been completed and turned over to the troops for use and care; 12 fire commanders' and 30 battery commanders' stations are under construction.

A very extensive experimental system of position finding, using long horizontal bases, is now being installed at Pensacola by this Department and the Signal Corps, in accordance with the plans of Maj. G. N. Whistler, Artillery Corps, approved by the Chief of Artillery. As a result of these tests it may prove unnecessary to construct such a large number of high steel towers as was originally provided by the Board on Location of Position Finders, whose reports have been the basis on which all allotments for range-finder stations have, up to the present time, been made.

The appropriation of $325,000 for installation of range and position finders, made by act approved June 6, 1902, became available too late in the year to permit any work to be done before July 1, 1902. The total amount of this appropriation, and $325,000 in addition, will be needed to provide batteries already built with their fire-control stations, under present plans of the artillery.

Preservation and repair of fortifications.—Operations under this appropriation have been limited during the fiscal year to the preservation of engineer material in new batteries, and to the application of remedial measures for reducing the dampness in some magazines in the earlier works. The mechanical and electrical appliances in modern batteries demand unremitting attention to prevent deterioration and damage under the destructive influence of the moist sea air, and the limited annual appropriations, prior to the last act for preservation and repair of fortifications, did not suffice to meet the numerous needs of the ever-increasing number of batteries. The new works already constructed represent an expenditure of approximately $25,000,000 for engineering work alone. With the $300,000 provided by the act of June 6, 1902, for works of preservation and repair it will be possible to remedy many incipient leaks and other defects which should have received attention before, as well as to remove some of the faults of construction of the older works. It is strongly recommended that an appropriation of the same sum be again made this year, as the needs are great and the number of separate works requiring attention and care is constantly on the increase.

Supplies for seacoast defenses.—The acts of May 25, 1900, March 1, 1901, and June 6, 1902, each appropriated the sum of $25,000 for tools and electrical and engine supplies for use of the troops for maintaining and operating light and power plants in gun and mortar batteries. This is designed to enable the Engineer Department to meet the requirements of paragraph 382, Army Regulations, prescribing the articles which are to be supplied by the Engineer Department to the Coast Artillery for the service of the batteries. Requisitions are made directly upon the Chief of Engineers, and authorized articles are purchased and issued by the district officers with as little delay as possible. This system has proved satisfactory. As the number of plants in the hands of the artillery has been much increased during the past year, an estimate of $35,000 is submitted for the same purpose for the next fiscal year.

Sea walls and embankments.—The act of May 25, 1900, appropriated $150,000 for a sea wall and filling in at Fort Caswell, N. C., based upon a special estimate to Congress as a result of an extraordinary storm tide on September 30, 1899, which broke over the reservation and did serious damage to the buildings and batteries. At the close of the preceding fiscal year the concrete wall was complete, and a contract for fill behind the wall had been let. The filling has been completed during the past fiscal year.

The act of March 1, 1901, appropriated $100,000 for the general construction of sea walls and embankments. This appropriation has been applied to the construction of sea walls at fortifications for the defense of Narragansett Bay, the eastern entrance to Long Island Sound, New York Harbor, Baltimore, Md., Hampton Roads, Virginia, and New Orleans, La.

The act of June 6, 1902, appropriated $100,000 for the construction

of sea walls and embankments, which has been applied to the construction of sea walls at fortifications for the defense of the eastern entrance to Long Island Sound, New York Harbor, Hampton Roads, Virginia, Tampa, Fla., Mobile, Ala., and San Diego, Cal.

Based upon reports of district engineer officers showing the necessity for their construction, an estimate of $160,000 is submitted for the construction of sea walls and embankments at a number of additional localities.

Sites.—During the past year negotiations have been continued for the acquisition of one site at Boston Harbor, one at Narragansett Bay, and one at Fort St. Philip, La.; the acquisition of one site at the mouth of the Kennebec River, one in Boston Harbor, one at Narragansett Bay, one at St. Johns River, Florida, one at San Diego, Cal., and one tract at New York Harbor was completed during the year. In addition, negotiations have been entered into for the acquisition of one site at Portland, Me.

A number of sites still remain to be acquired to carry out the approved projects of seacoast defenses, and an estimate of $2,000,000 is submitted to continue the work. The most important of the sites still to be acquired is the one at the southern entrance to New York Harbor, rendered necessary by the new deep-water entrance now under construction.

Submarine mines.—All torpedo material necessary for a quick and effective defense is now in store at each harbor for which torpedo defenses are at present projected. With few exceptions, all harbors are now equipped with torpedo storehouses, cable tanks, and mining casemates. Mining casemates and additional storage facilities are still required at several localities; an estimate of $100,000, to be expended under the Engineer Department, is submitted for their construction. The purchase of torpedo material proper, such as cables, cases, floating plant, etc., was by the act of June 6, 1902, assigned to the Artillery Corps, and the construction of the buildings, casemates, cable galleries, and cable tanks left with the Corps of Engineers.

By the Army reorganization act of February 2, 1901, the torpedo defense of the seacoast devolved upon the artillery troops. The material has been reported ready for transfer at all points except Boston, Mass., and Galveston, Tex.

Actual transfers have been made as follows:

Portland, Me., September 30, 1901.
Portsmouth, N. H., December 16, 1901.
New Bedford, Mass., November 15, 1901.
Narragansett Bay, November 15, 1901.
Eastern entrance to Long Island Sound, May 20, 1901.
Eastern entrance to New York Harbor, July, 1901.
Southern entrance to New York Harbor, May 6 and 14, 1901.
Delaware River, July 13, 1901.
Baltimore, Md., April 29, 1901.
Washington, D. C., July 24, 1901.
Hampton Roads, Virginia, December 31, 1901.
Wilmington, N. C., November 6, 1901.
Charleston, S. C., May 2, 1901.
Port Royal, S. C., July 26, 1901.
Savannah, Ga., June 29, 1901.
Key West, Fla., October 15, 1901.
Tampa, Fla., August 17, 1901.
Pensacola, Fla., May 27, 1901.
Mobile, Ala., June 15, 1901.
New Orleans, La., November 6, 1901.
San Diego, Cal., May 31, 1901.
Columbia River, April 30, 1901.

Searchlights and electrical connections.—The fortification appropriation act of March 1, 1901, appropriated $150,000 for the purchase and installation of searchlights for the defenses of New York Harbor. Under this appropriation work is well advanced. The act of June 6,

1902, appropriated $150,000 for the general installation of searchlights in seacoast defenses.

The construction of the national seacoast defenses has now reached a point where most of the heavy guns are in position, a considerable portion of the light rapid-fire emplacements and some of the rapid-fire guns are completed, and it is important to continue the systematic installation of searchlight apparatus for night defense. Experience in New York Harbor and elsewhere has shown that economy in installation and the keeping of the electric plants in good order in time of peace are promoted by habitually using the fortification plants for post illumination also. An estimate of $500,000 for searchlight installation is submitted, and is recommended for special consideration as one of the urgent needs of the defense at this stage of its progress.

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OFFICE OF THE CHIEF OF ENGINEERS.

During the fiscal year ending June 30, 1902, the following-named officers were on duty in this office as assistants:

Col. Alexander Mackenzie.
Lieut. Col. William R. Livermore, since June 3, 1902.
Maj. James L. Lusk.
Maj. Frederic V. Abbot.
Capt. Mason M. Patrick, since August 16, 1901.
Capt. Charles S. Bromwell.

Very respectfully, your obedient servant,

G. L. GILLESPIE,
Brig. Gen., Chief of Engineers,
U. S. Army.

Hon. ELIHU ROOT,
Secretary of War.

REPORT OF THE CHIEF OF ORDNANCE.

OFFICE OF THE CHIEF OF ORDNANCE,
U. S. ARMY,
Washington, October 28, 1902.

SIR: 1. I have the honor to submit the following report of the principal operations of the Ordnance Department during the past year, together with certain remarks as to its interests and necessities.

2. The fiscal resources and expenditures of the Department during the year were as follows, viz:

Amount in the Treasury to the credit of the appropriations on June 30, 1901	$9,837,080.24
Amount in the Treasury not reported to the credit of the appropriations on June 30, 1901	8,266.18
Amount in Government depositories to the credit of disbursing officers and others on June 30, 1901	1,819,476.25
Amount of appropriations for the service of the fiscal year ended June 30, 1902, including the appropriation for armament of fortifications in the act approved June 6, 1902	8,134,507.45
Amounts refunded to ordnance appropriations in settling accounts during the fiscal year ended June 30, 1902	654,317.09

Gross amount received during the fiscal year ended June 30, 1902, from sales to officers, from rents, from collections from troops on account of losses of or damage to ordnance stores, from Chicago, Rock Island and Pacific Railroad Company, from powder and projectiles (proceeds of sales), from sales of condemned stores, from testing machine, and from all other sources not before mentioned	428,253.90
Total	20,881,901.11

Amount of expenditures during the fiscal year ended June 30, 1902, including expenses attending sales of condemned stores, exchange of powder, etc	8,792,964.24
Amount deposited in Treasury during the fiscal year ended June 30, 1902, as proceeds of sales of Government property	245,227.87
Amount turned into the surplus fund on June 30, 1902	42,164.94
Amount in Government depositories to the credit of disbursing officers and others on June 30, 1902	1,621,099.14
Amount transferred from ordnance appropriations in settling accounts during the fiscal year ended June 30, 1902	162,284.06
Amount in the Treasury not reported to the credit of appropriations on June 30, 1902	3,965.62
Amount in the Treasury to the credit of appropriations on June 30, 1902	10,014,195.24
Total	20,881,901.11

CLERICAL FORCE.

3. In accordance with the requirements of existing laws, I have made an estimate of—

1 chief clerk, at $2,500, whose present salary of $2,000 per annum is not at all commensurate with the important and very valuable service he is rendering the Department.
6 clerks of class 4 (increase of 3).
7 clerks of class 3 (increase of 2).
12 clerks of class 2 (increase of 6).
22 clerks of class 1 (decrease of 13).
14 clerks at $1,000 per annum (decrease of 5).
14 clerks at $900 per annum (increase of 7).
Making a total of 75 clerks, which is the same number as the present force, and
4 messengers.
1 assistant messenger.
1 laborer.

4. The present force consists of—

1 chief clerk.
3 clerks of class 4.
5 clerks of class 3.
6 clerks of class 2.
35 clerks of class 1.
19 clerks at $1,000 per annum.
7 clerks at $900 per annum.
Making a total of 75 clerks, and
4 messengers.
1 assistant messenger.
1 laborer.

5. The present office force includes the permanent force appropriated for in the legislative, judicial, and executive appropriation act approved April 28, 1902, and includes also the temporary force authorized by the acts of July 7, 1898, February 24, 1899, April 7, 1900, and March 3, 1901. This temporary force was, by section 3 of the above-stated act, approved April 28, 1902, transferred to the classified service.

6. The percentage in each of the several grades of clerks called for in the above estimate for the fiscal year ending June 30, 1904, is the average of the percentages in all the bureaus of the War Department, except that none are asked for of grades above the fourth class and none of grades below the $900 class.

7. The experience of this office for several years past has been that many valuable clerks in the lower grades resign to accept positions in the other bureaus of the War Department and in other departments at increased salaries, the limited number of the higher-grade clerkships in this office offering no prospects for promotion to these men. During the past year four of our clerks receiving $1,200 per annum and four receiving $1,000 per annum have resigned to accept positions, at increased compensation, in other departments of the Government and in outside employment. The Department is thus depleted of its best material from which to make selections for filling vacancies occurring in its highest and most responsible positions. This has proved a practical source of embarrassment.

DISPOSITION OF CONDEMNED CANNON, ETC.

8. The act of Congress approved May 22, 1896, provides—

> That the Secretary of War and the Secretary of the Navy are each hereby authorized, in their discretion, to loan or give to soldiers' monumental associations, posts of the Grand Army of the Republic, and municipal corporations condemned ordnance, guns, and cannon balls which may not be needed in the service of either of said Departments. Such loan or gift shall be made subject to rules and regulations covering the same in each Department, and the Government shall be at no expense in connection with any such loan or gift.

9. Under the provisions of this act donations have thus far been made to Grand Army posts, monumental associations, and municipal corporations to the extent of 866 cannon and 11,752 projectiles. The donations during the past fiscal year are shown to be 101 cannon and 955 projectiles.

SALE OF OLD ORDNANCE AND ORDNANCE STORES AT ARSENALS AND FORTIFICATIONS UNDER REVISED STATUTES, 1241.

10. The proceeds of sales of condemned ordnance material at the various ordnance establishments and other military posts during the past fiscal year, amounting to $244,787.52, has been deposited in the Treasury of the United States.

GATHMANN GUN.

11. Since the date of the last report of the Chief of Ordnance a test, especially directed by Congress, of the 18-inch Gathmann gun, in comparison with the 12-inch service rifle, has been made. In its final and much modified form the Gathmann system consisted only of an exceptionally large gun and projectile, with nothing of special invention except the detonating fuse. The object was to throw a large charge of high explosive, the capacity of the projectile being increased at the expense of its strength until there was no expectation of penetration of armor before explosion. All previous experiments had resulted in the general professional opinion that a projectile exploded on the outside of an armored structure would do it less damage than a similar projectile without explosive charge, but with power of penetrating the armor. This experiment, tried on a larger scale than any

which had preceded it, confirmed the opinion already existing. The conclusion of the joint board of army and navy officers which made the test was as follows:

There is nothing in the Gathmann system to recommend its adoption in the public service of the United States or to warrant further experiments.

The complete report of the board has been submitted and published. The total cost to this Department of all experiments with the Gathmann system, from the time of its submission in its original form, has been $135,062.60.

EXPERIMENTAL MUSKET.

12. The improved musket, which was referred to in the last report of the Chief of Ordnance as being under construction, has been completed and tried, with very satisfactory results. The principal points of its difference from the present service musket are the use of two lugs instead of one for holding the bolt against the rearward pressure of the powder, with resulting increase of strength sufficient to enable a velocity of 2,300 feet per second to be obtained; the housing of the magazine in the stock directly below the chamber instead of having it project to one side. In addition to these there are various changes of details which both improve the rifle and cheapen and accelerate its production. The arm is supplied with a cleaning rod which can be partially pulled from its place below the barrel and held with a catch so as to form a bayonet. The "rod bayonet," as it is called, has been considered before, but has never received a thorough trial in the service. Its great advantage is that it lightens the weight made up of the gun, bayonet, and bayonet scabbard, and by dispensing with the latter two as separate articles to be carried permits the soldier to carry with him an intrenching tool of sufficient size and weight to be serviceable. There are differences of opinion as to the value of the rod bayonet; although less effective as a bayonet alone than the one now in use in the service, it is undoubtedly of some value in converting the musket into a pike, and in view of the increasing prominence of the intrenching tool and the decreasing occasion for the use of the bayonet its experimental substitution is in line with apparent progress in subordinating the latter to the former. The principal elements of the new piece in comparison with those of the present service rifle are contained in the following table.

	Springfield magazine rifle.	Service magazine rifle.	Mauser 7 mm. rifle.	German military rifle.
Caliber ..... inches..	0.30	0.30	0.275	0.311
Rifling:				
Number of grooves	4	4	4	4
Depth of grooves ..... inches..	.004	.004	.0049	.004
Twist, one turn in ..... do....	10	10	8.66	9.45
Weight of bullet ..... grains..	220	220	173	226.82
Weight of charge ..... do....	43.3	37.6	38.58	41.2
Weight of complete cartridge ..... do....	451.15	438.85	385.63	430.24
Initial velocity ..... feet per second..	2,300	2,000	2,200	2,145
Remaining velocity at 1,000 yards	958	901	895	906
Muzzle energy ..... foot-pounds..	2,581.6	1,952	1,857.4	2,315
Striking energy at 1,000 yards ..... do....	447.9	396.2	307.4	413
Penetration in white pine at 53 feet ..... inches..	54.7	45.8	50.8	.....
Weight of rifle, including bayonet and scabbard, pounds	9.47	10.64	10.5	11.54
Weight of rifle, including bayonet, scabbard, and 100 cartridges ..... pounds..	15.91	16.91	16.18	17.68
Capacity of magazine ..... rounds..	5	5	5	5
Maximum ordinate of 1,000-yard trajectory .... feet..	20.67	25.8	24.47	23.73

13. The construction of 5,000 of the new muskets has been authorized for issue and trial in the service. The preparations for their manufacture at the Springfield Armory are progressing steadily and are made upon a scale which will permit the production of the pieces at the rate of 125 per day of eight hours. When the manufacture shall commence it will thus be seen that the total number authorized can be produced in about forty days, and it is expected that they will be ready for distribution in the coming spring.

14. The only radical improvement in muskets which is now known to be under study is the application to these arms of the automatic principle, to the extent of causing the musket itself to effect its own reloading upon discharge. The principle has been already applied with some success to pistols, and its advocates claim that it is logically in the line of development of the magazine rifle, in reducing to a minimum the interval between aimed shots. Both tactical and mechanical questions are involved in the consideration of the possible desirability of the substitution of a semiautomatic musket for the hand-operated magazine rifle. Up to the present time mechanical invention has not solved its part of the problem, and no rifle of the class has been presented to this Department for examination and test, although its willingness to take the subject up has been signified whenever occasion has offered.

15. In the meantime the question of the accumulation of a sufficient reserve of small arms to meet possible requirements is one of importance. Congress has indicated its appreciation thereof by increasing, in the appropriation act last passed for the purpose, the amount to be expended in the manufacture of small arms from $1,100,000, the previous figure, to $1,700,000. Under these circumstances it is important to decide whether the manufacture of the present service rifle shall continue at the current rate until such period as the new gun shall have been issued and tested, and the preparations in the way of machines and fixtures shall have been made for its entire substitution for the present arm. The time required for a determination to be arrived at in this manner would be sufficient to very considerably increase the number of the present service rifles on hand, and it is the view of this department that there would be less risk of error in assuming that the new musket, of which the promise, after very thorough test, is so favorable, is going to be sufficiently superior to the present one to take the place of the latter, and in proceeding with preparations for its manufacture accordingly, than in continuing to accumulate muskets of the present type to be probably discarded and replaced.

16. The present manufacturing capacity of the Springfield Armory for the service musket is at the rate of about 200 per day of eight hours; to this rate will be added that of 125 per day of the new arms, to be attained at some time in the early part of the next calendar year. Preparations will be made to continue the manufacture of 125 of the new arms per day after the completion of the 5,000 now authorized, and to gradually change the machines now used in building the present musket to adapt them to the manufacture of the new one, and also to so arrange the additions to the plant now in progress that when the capacity of 400 guns per day, which is that now contemplated for the future at this armory and for attaining which appropriations have already been made, shall be reached, the establishment will be able to turn out the entire 400 guns per day of the new model; and this with the least interruption practicable of the current manufacture.

17. There is now approaching completion at the Rock Island Arsenal an armory with a manufacturing capacity of 250 muskets per day of eight hours, although it will not be ready for operation for at least a year because of the postponement of the installation of certain machines and of the equipment of many with fixtures until such time as the type of rifle to be manufactured shall be decided. For the reasons stated above, preparations will now be made under the supposition that the new rifle under construction is to be adopted, the risk of error being considered less undesirable than further delay. When the two establishments shall be fully equipped, their total capacity will be 650 arms per day of eight hours, and the question will arise as to the extent to which they are to be operated. Assuming the number 500,000 to be a proper reserve, production at the present rate of the Springfield Armory, 200 per day, would cause the supply to be accumulated in something over eight years. With the contemplated capacity of 400 per day at the Springfield Armory this period would be reduced to four years, and with the full capacity of both establishments working eight hours per day the time required would be about two and one-half years. As considerations of the employment of labor would be against the policy of greatly diminishing the rate of manufacture after so short a time, an output below the full capacity of each establishment will most likely be found desirable. It is necessary that both plants shall be kept in operation in order to preserve at each establishment the necessary skill and experience for the operation of its plant; and if each be employed at about half its capacity the total output will be 325 guns per day, at which rate the reserve of 500,000 will be reached in about five years. In case of emergency, both establishments could be operated upon the basis of a twenty-hour day, and under these circumstances would be capable of a daily output of 1,500 rifles, which in three months, after the necessary workmen should have been secured, about the time necessary for assembling a volunteer force, would provide 135,000 arms.

Details as to the progress of the establishment of the Rock Island Armory appear in the portion of this report especially devoted to that arsenal.

WINCHESTER RIFLES.

18. The 10,000 magazine rifles, caliber .30, purchased in 1898 and 1899 upon the recommendation of the Commanding General of the Army, and reported upon unfavorably from the service, are still on hand. As they use the service ammunition, they will be kept, without recommendation as to their ultimate disposition, until such time as the proper reserve of other arms shall have been accumulated.

NEW FIELD MATERIAL.

19. A competitive test of field material, under a programme prescribed by the Board of Ordnance and Fortification, has been made by this Department during the past year. Material representing eight systems was tested, all using fixed ammunition. It can be divided into three general classes as follows:

Class I.—The gun and carriage recoiling as a unit.

Armstrong 3-inch rifle mounted upon a rigid carriage having a spade connected with the axle and with the trail by an elastic union, known as the Clarke pattern. The carriage provided with a screw brake.

Cockerill-Nordenfelt 75 mm. (2.953 inches). Belgian pattern, with Nordenfelt eccentric block breech mechanism. The gun mounted in a cradle with a movement in azimuth on the carriage; the latter provided with recoil brakes in the form of shoes under the wheels.

Class II.—The gun having a short recoil on the carriage, the latter provided with hydraulic cylinders and counter-recoil springs.

Ordnance Department model of 1900, 3-inch rifle with Gerdom breech mechanism. The gun mounted in a cradle having a movement in azimuth on the carriage; the latter provided with a trail spade and a screw brake.

Vickers-Maxim 75 mm. (2.953 inches) rifle mounted in a cradle having a movement in azimuth on the carriage; the latter provided with a fixed trail spade and with wheel shoes.

Class III.—Guns having long recoil on the carriage; the latter having hydraulic cylinders and counter-recoil springs.

Bethlehem No. 2. Three-inch rifle mounted upon a Lewis carriage. The body of the carriage having a movement in azimuth along the axle. The carriage provided with a fixed trail spade and with wheel shoes.

Bethlehem No. 3.—Three-inch rifle mounted upon a Bethlehem carriage provided with counter-recoil springs in the trail, connected with the piece by wire ropes, and fixed trail spade and wheel shoes. The body of the carriage having movement in azimuth along the axle. Wheel shoes.

Ehrhardt 3-inch rifle, Norwegian pattern, with Nordenfelt eccentric block breech mechanism.—The gun mounted in a cradle having a movement in azimuth on the carriage; the latter provided with an extension trail, a fixed trail spade, and a screw brake.

Ordnance Department model 1901, 3-inch rifle with Gerdom breech mechanism, mounted in a cradle having a movement in azimuth on the carriage; the latter provided with a fixed trail spade and a lever brake.

20. The Bethlehem Company also sent to the proving ground a gun and carriage, designated as Bethlehem No. 1; these were, however, shortly withdrawn by the company and not subjected to test.

21. The trials comprised tests for velocity, accuracy, rapidity, rapidity with accuracy, maintained rapidity; the behavior of the material with defective ammunition, under conditions of dust, rust, and excessive charges; its action on platforms of clay, loam, sand, rock, and macadam; also when fired with the trail rigidly supported against a post set in the ground. The limbers with chests completely filled were subjected to jolting on a vibrating table to assimilate the effect of bad roads. The material was subjected at Fort Riley, Kans., to a practice march of 150 miles and to all the maneuvering necessary to constitute a complete field trial.

22. Comparatively early in the test it became evident that those types in which the gun was given a long recoil upon the carriage were superior to all others, and the latter were withdrawn from further test. Finally but three systems, viz, the Bethlehem No. 2, the Ehrhardt, and the Ordnance Department, long recoil, were carried through all the tests contemplated by the programme. As to these, the conclusions of the ordnance board were as follows:

The Bethlehem No. 2 system did not withstand a satisfactory test either as regards the carriage or the breech mechanism of the gun. The recoil system failed repeat-

edly to operate properly, and the defect of axle traverse was conclusively shown, aside from other objections, when traversing was prevented by a slight bending of the axle in firings from rock platform. In general, also, this system lacked sufficient steadiness under fire, the jump of the wheels is excessive, and it could not be served by cannoneers sitting upon the trail. The breech mechanism proved defective in the form of the thread, which permits the block to be easily wedged in its seat, and the carrier latch worked with difficulty when dusted. The link connecting the operating lever and breechblock was broken and the lever handle also. A further serious objection is the method of assembling the firing pin and spring by which a prohibitive length of time is required to replace one of these parts in case of breakage.

The Ehrhardt material is the only one of the whole number tested in which the total weight allowed behind horses (cannoneers excepted) falls within the limit of 3,950 pounds prescribed by the programme. The performance of this material, on the whole, including ammunition with time fuze, proved very creditable. Few occasions arose in which any stoppage of fire was required, and the repairs necessitated were such as could be readily and quickly made at the gun, with the exception of repairing the elevating screw and replacing the separators in the counter-recoil spring column.

The Ordnance Department long-recoil material gives a weight of 4,289 pounds behind the horses, and the wheels (diameter 48 inches) are too low. These disadvantages led to a relatively poor showing in the road trials of the field tests. The performance of this material on the firing grounds was good throughout and marked by fewer interruptions of fire and less need of repairs than any other. On the few occasions when it has failed to return fully into battery it was corrected by slightly releasing the glands of the stuffing boxes, except at one time in the field tests when scoring occurred in the counter-recoil buffers and rendered their removal necessary for cleaning and smoothing off. This scoring was due to small chips of steel which had apparently been inadvertently left in the buffer at manufacture. The steadiness of the carriage in the firing is superior to that of the Ehrhardt, while the latter gave somewhat less carriage recoil, due to the greater surface of the trail spade. The Ehrhardt spade also presents the better form in being pointed instead of having a straight bottom edge.

* * * Where fixed ammunition is used for the interrupted screw mechanism, the firing pin should be eccentric and brought opposite the primer only when the block is locked.

Provided this modification is made the Gerdom breech mechanism can be considered decidedly superior to the Nordenfelt.

The three limbers fitted with springs were all broken down in the tests, and one of them only was carried through the test, after modification, with springs badly damaged. The results of these tests show that the ammunition was not damaged by a test that broke down the spring constructions, and that the latter could not be made to withstand the test without increasing their stiffness to such a degree as nearly to preclude any utility as springs and at the same time add largely to the weight of the material.

23. It is observed that only two systems, the Ehrhardt and the Ordnance Department long-recoil, are reported to have passed the tests in a manner not unsatisfactory. As to these, certain defects and undesirable features are noted by the board.

24. The department is now proceeding with the manufacture of field material from designs which it has prepared concurrently with the development of knowledge by the tests. The new gun will have a caliber of 3 inches and will fire a projectile weighing 15 pounds with an initial velocity of 1,700 feet per second. The breech mechanism will be of the type used with the Ordnance Department gun in the tests, with a modification for insuring greater safety. The piece will have a recoil of from 45 to 48 inches upon the carriage and the recoil-checking device will be a single cylinder placed under the gun, the return to the firing position being effected by a spiral spring. The gun will be given a slight movement in azimuth upon the carriage about a vertical pivot. The trail and its method of attachment to the axle will be substantially as in the Ordnance Department design tested, but the trail will have greater length to compensate for the

increased height of gun necessitated by the substitution of the single recoil cylinder for the pair previously used. The wheels will be of the pattern of the test carriage of the Ordnance Department, but of larger diameter. Bullet-proof shields will be provided.

25. The development of the field material entered for the tests by this Department is perhaps its most satisfactory piece of work for the year. The credit is principally due to Capt. Charles B. Wheeler, Ordnance Department, who is responsible for the design of the gun carriage.

26. Other classes of field material than that mentioned are necessary for the equipment of the service. As to these the Department is concerning itself with the provision of new designs, but with slower progress than would be desirable, because of the lack of personnel disposable for assignment to the study of the subject.

MOUNTAIN ARTILLERY.

27. Several mountain guns and carriages have been tested by the Department during the year, but none have shown themselves superior to those of the Vickers-Maxim system now in the service, and the manufacture of these is being continued. Should the obligations of the United States for protective duty carry its forces into the countries to the southward of us, where mountainous regions and the absence of practicable roads prevail, this class of gun will be necessary as the main reliance of the artillery.

SIEGE ARTILLERY.

28. A new carriage for the 7-inch howitzer has been built and tested. It differs from the former design principally in having the piece mounted at a height of 5 feet, instead of 6 feet above the ground; this for the purpose of increasing the stability when upon the march. The carriage has been tested with satisfactory results, showing that it fulfills the object of its design, and it is being reproduced in limited quantities. It is, however, recognized that improvements of siege material have necessitated the rearmament of the service with this class of weapon and the Department is engaged on new designs therefor; but being hampered by lack of officers it has not been able to carry on simultaneously the designs for different pieces and carriages of the class, some of which are therefore awaiting the opportunity to take them up.

29. Experiments are in progress at the Sandy Hook proving ground having for their object the determination of a design for large capacity shells for siege pieces, to be used with high explosive bursting charge.

SEACOAST CARRIAGES.

30. The rate of delivery and issue to the service of seacoast carriages completed during the year has in general been satisfactory. In addition to the manufacture of a limited number at Watertown Arsenal, contracts required the delivery of carriages by two private manufacturers, as follows:

Six-pounder and 15 pounder guns, carriages, and ammunition by the Driggs-Seabury Gun and Ammunition Company, and

Ten-inch and 12-inch disappearing carriages by the Midvale Steel Company.

31. The appropriation for the construction of material by the Driggs-Seabury Gun and Ammunition Company, under their contract with this Department, dated April 15, 1898, lapsed June 30, 1901, and in consequence no deliveries of new materials thereunder were made during the past year. The balance of the material undelivered under this contract is as follows:

12 15-pounder guns and masking parapet mounts.
2 15-pounder guns and casemate mounts.
12,000 rounds 15-pounder ammunition, steel shell, complete.
6,973 rounds 15-pounder ammunition, common shell, complete.
4,000 rounds 15-pounder shrapnel, complete.
2,000 rounds 6-pounder ammunition, steel shell, complete.
1,000 rounds 6-pounder ammunition, common shell, complete.

Authority to resume work on this contract has recently been given as a result of Congressional action, and there appears to be no reason to doubt the ability of the contractors to meet the terms of the renewal.

32. The company has also been much delayed in its work under a contract for similar material, dated July 8, 1899.

33. In May, 1901, the works at Derby were closed and remained so, pending a reorganization of the company, until October 1, 1901. A supplemental contract of the latter date was made necessary by the failure of the company to make deliveries in accordance with the original contract, and simply established new dates and rates for delivery of the remaining material, in consideration of the addition of certain improvements to be made without increased cost to the United States.

34. Deliveries under the supplemental contract were generally on time up to and including February, 1902.

35. During the greater part of March last the works were closed on account of financial difficulties, which resulted in the company going into the hands of receivers, by whom the business has since been conducted.

36. The Midvale Steel Company was not able to deliver the carriages under its contract of August 2 and 20, 1900, within the stipulated time. The delays in the delivery of these carriages were to a large extent due to an underestimation by the company of the time required to establish a new industry in its shops, including the installation of plant and the providing of the various materials requisite for the successful prosecution of the work. Now, however, the company has this department well organized and equipped, and all present and future contracts should be completed in contract time, due allowance being made for delays caused by improvements made as the work progresses.

37. The attention of the Department has been directed toward improving the designs of seacoast carriages, particularly with reference to their method of control, facility of loading, and ease of maintenance in good order.

38. The disappearing carriages, model of 1901, embody all of the desirable improvements indicated by experience and practice had with carriages up to the present time, including the application of a system of electrical control in connection with an improved method of sighting.

39. The electrical equipment applied to the 12-inch disappearing carriage exhibited at the Pan-American Exposition, while imperfect, attracted favorable attention from visiting officers.

40. To increase this experience and to test further the advantages of such equipment, orders were placed for the attachment to eight 12-inch disappearing carriages, at four widely separated forts, of two systems of electrical control devised by different manufacturing firms.

41. Tests have been made of the apparatus supplied, and these and other experiments made during the past two years have proved conclusively the desirability of attaching electric motors to disappearing carriages in service, for retracting the guns at least, and an estimate to cover the cost of their application to all 12-inch carriages has been submitted.

42. In addition to the improvements in carriages efforts are being made to increase the rapidity of fire from all seacoast guns by the application of automatic or semiautomatic appliances for opening and closing breech mechanisms and by the use of special devices for ramming projectiles and inserting powder charges. By these means it is hoped that the present rate of fire will be considerably increased.

43. The subject of the continuation of the production of disappearing carriages for use in the coast-defense service has received prominent consideration during the past year. Meeting the demand for them, the manufacture of these carriages was commenced in the year 1893, after a thorough test of types, and continued without interruption until the present year. The efficiency of the type used was never called in question until the Commanding General of the Army, in letters dated October 14, 1899, and April 26, 1900, reported the system as being complicated, expensive, uncertain, and unnecessary. This was followed by action by the Board of Ordnance and Fortification, of October 8, 1900, the board by a majority vote, as then constituted, recommending that no additional disappearing carriages be manufactured for use on high or medium sites and that no more should be manufactured for use on low sites until the proportion of those to be placed on such sites should have been reduced to one-third of the total number to be so located. This action never having received the approval of the Secretary of War, the manufacture was continued until Congress at its last session directed that the further production of the carriages should be contingent upon the thorough test of the system by a board of disinterested officers, including also a civilian mechanical engineer.

44. A board was therefore appointed consisting of an officer of engineers, an officer of ordnance, a naval officer, three artillery officers, and a civilian mechanical engineer, and was directed to test the system by firing not only the thirty rounds from a 10-inch disappearing gun prescribed by Congress, but also thirty rounds from a 10-inch barbette gun and ten rounds each from 6, 8, 10, and 12 inch guns mounted on both disappearing and barbette carriages. The board visited five artillery posts and fired over 150 rounds with full service charges, and in conclusion recorded its opinion that the general mechanical principles involved in the chief elements and movements of the Buffington-Crozier disappearing carriage were admirably adapted to their purpose.

45. The long-continued firing of some of the guns used in the test at a more rapid rate than has ever before been attained, as far as the information of this Department extends, disclosed the fact that the material of the gas-check pads used is considerably and unfavorably affected by the resultant heat, and indicated the necessity for modify-

ing the pad in such manner as to meet this difficulty. The attempt is being made by the alteration of the form and composition of the gas-check pad and by subjecting it to much heavier initial compression. Success is hoped for. The incident illustrates the desirability of occasional long-continued tests of the material under service conditions; the hesitancy to incur the expense entailed by such tests should give way to the necessity for certain knowledge as to the endurance of all the elements of the armament.

SUBCALIBER TUBES.

46. All the field batteries in service, with the exception of one, have been supplied with caliber .30 tubes and ammunition for subcaliber practice, and also the two batteries of siege guns.

47. For the mountain guns a combined dummy and drill cartridge has been provided and supplied to all except two of the batteries.

48. These tubes are issued on the basis of one caliber .30 tube for each siege gun and three to each field battery of six guns. One combination dummy and drill cartridge is issued to each mountain gun.

49. One-pounder subcaliber tubes have been provided for all guns from 4 to 12 inches caliber and combination drill and dummy cartridges caliber .30, for the 6 and 15 pounder guns.

50. Two hundred and fifteen of these 1-pounder subcaliber tubes have been ordered by contract from the American Ordnance Company. All the tubes for the 8, 10, and 12 inch breech-loading rifles have been completed. Those for the rapid-fire guns are not finished, but their completion is expected at an early date.

51. These tubes are to be distributed one tube per post for each caliber and model. Ninety-two tubes, which comprise all now required for the 8, 10, and 12 inch breech-loading rifles, have been ordered issued, and shipment awaits only delivery of special packing boxes.

52. Of the 92 ordered issued 20 are for the Pacific coast, which will complete the equipment for that coast. The remainder are to be distributed in the Department of the East.

53. For subcaliber practice with the 12-inch breech-loading mortars 2.95-inch tubes will be used, and experiments on this subject are now in progress.

54. The annual allowance of ammunition for this subcaliber practice is as follows:

For mountain, field, and siege guns, 500 rounds caliber .30 ammunition per gun.

For 6 and 15 pounder rapid-fire guns, 2,000 rounds caliber .30 ammunition per company.

For all other rapid-fire guns, 1,000 rounds 1-pounder ammunition per company.

For 8, 10, and 12 inch breech-loading rifles, 300 rounds 1-pounder ammunition per company.

ARMY AND NAVY MANEUVERS.

55. At the joint maneuvers which took place in the latter part of September in the New London and Narragansett artillery districts a number of matters connected with the coast defense were given such prominence as to arrest thought, and thus to constitute practical les-

sons as to necessary improvements and additions. The shipment of ammunition required for target practice by the companies forming the garrisons of the posts and by those which were ordered to them for participation in the maneuvers, of that required for use in the blank firing during the progress of the maneuvers, and of the reserve ammunition which it is contemplated to keep at the posts was commenced about one month previous to the date of the beginning of the exercises. It was made apparent that this time was not sufficient for the supply, by ordinary means of transportation, of such a large quantity of powder and projectiles as was required. The shipping facilities of the powder depot near Dover, N. J., and of the ordinary means of transportation were overtaxed, with the result that it may be considered demonstrated that special means will have to be taken whenever in future shipments of equal magnitude may be again required, and that the enlarged facilities now in process of establishment at the powder depot are of imperative necessity.

56. A number of guns and mortars were hastily mounted and prepared for use, so that practically all of the emplacements were provided with their proper armament. Those pieces which had not before been fired from their emplacements were given proof rounds in order to test their condition and serviceability. As a result of these proof rounds, a fact of which there had recently been some evidence was developed, viz, that the racers of the mortar carriages were too weak to withstand the recoil resulting from the full charge of smokeless powder developing the highest velocity which the mortars had been found capable of giving to the projectile. The use of these highest charges will therefore not be made until after the racers of the carriages shall have been replaced by similar ones of cast steel, until which time the extreme range must be limited to 11,500 yards, instead of the 12,500, of which the pieces are capable; but as this is some 1,500 yards greater than they were originally designed to attain, the change may be regarded as one giving, at small expense, a considerable increase over the primitive value of the mortars.

57. The large amount of target practice which immediately preceded the maneuvers proper constituted a severe test of the armament. In addition to the ammunition for this target practice a special allowance for the purpose of more thoroughly testing the material was made, all of it consisting of full charges of smokeless powder and projectiles of standard weight. The whole constituted a test such as none of the seacoast material of the country has ever before been subjected to; special instances of the strain which the material endured may be mentioned in the firing of more than 40 rounds from each of the 6-inch disappearing guns at Fort Wright, and, adding the rounds incident to the maneuvers to the series which had been fired immediately before by the carriage-testing board, the firing of over 100 rounds, 80 with full service charges, from a 10-inch disappearing gun. These large number of rounds developed no weakness of the guns except that previously mentioned of the gas-check pads, which new difficulty, of the class which it is the object of such operations to bring out, is being met by methods already described. The gun carriages survived the test without the least symptom of weakness, and at the conclusion were in perfect condition for an indefinite continuance of their service.

58. Some of the 15-pounder guns exhibited an imperfection of performance which was anticipated. These guns and their mounts were

obtained under contract from private manufacturers, and after their construction was well advanced it was discovered that the cradles of the mounts were not well designed, and owing to weakness of form were distorted by the strains due to the recoil of the pieces, causing binding of the parts. The replacement of the cradles is in progress and has been accomplished with some of the guns of the armament of the maneuver district, which operated without difficulty. Those which gave trouble were all nursed through their proper number of rounds, but at a diminished rate of firing.

59. The experience with this material illustrates a class of difficulty which is encountered by the department. The maintenance of an establishment for the designing and construction of ordnance is an enterprise of great magnitude, and it is doubtful if the patronage of this Government alone is sufficient to support an establishment with the proper plant and employing workmen of necessary skill, as well as the very expensive designing staff required to produce constructions of this special class, for which there is no commercial demand. The quality of the material and workmanship entering the armament which is purchased from private manufacturers may be insured by careful inspection, but some unfortunate experiences of this department indicate that disappointment and derangement of its plans, as well as great delay, may be expected as the result of effort to utilize in the production of the ordnance which it requires the design of weak organizations not employing engineering personnel of first-class ability.

60. The performance of 6-pounder guns mounted upon rampart carriages designed for use both behind parapets and as field pieces in the open, while demonstrating the serviceability of these weapons, was not of that character of satisfactory efficiency which this department likes to consider a characteristic of its material. The mounts for these guns are compromises designed to fulfill two objects, and the criticism to which they have been subjected, resulting finally in the determination to build no more of them, illustrates the uselessness of the attempt to use in our service any material in the production of which economy may have been promoted at the expense of efficiency. Every such effort is opposed by a voice which makes itself effectively heard, with the result that the true policy is shown to be the embodiment in material furnished of the highest degree of efficiency which can be attained, and the meeting of considerations of forced economy by diminished quantity.

61. Indications of previous experience were continued during the maneuvers to the effect that the effort to provide the necessary mechanical skill for the care of the armament through the instrumentality of the two mechanics now provided for by law for each company of artillery is not a success. Company commanders have repeatedly stated that they had not in their companies men of sufficient skill to be intrusted with the execution of the most ordinary work of a machinist, and my own observation during these maneuvers was that the processes which constitute the daily work of one in charge of any machine had necessarily to be attended to by the mechanics of the Ordnance Department. The reason seems to be the insufficient pay of the company mechanics, which does not tempt men who can secure the wages of machinists in private employment. This is corroborated by applications which have been made by exceptional ones of these company mechanics to secure their discharge from the

service in order that they might work at the armament in the employ of this Department, for the sake of the higher pay. In order to meet this condition and to provide the officers of artillery with proper help in caring for the armament of the fortifications it is considered that the pay of these mechanics should be considerably increased, reducing, if necessary in order to meet the increased expense, their number from two to one per company.

62. It is also thought that the personnel of each artillery post should include a machinist sergeant, with pay, etc., the same as that of the electrician sergeants now provided for. Men of the class of these sergeants will be absolutely necessary for taking proper charge of the small repair shops which are now being set up by this department at the headquarters of each artillery district. They could be advantageously enlisted by the Ordnance Department from among the workmen of known qualifications employed at its various manufacturing establishments.

63. During the maneuvers the temporary garrison of Fort Rodman, Mass., consisted of a battalion of the First Regiment of Massachusetts Artillery. The personnel of this regiment is composed largely of engineers, machinists, and electricians, who bring to their duties very valuable knowledge of mechanical details, and who, starting with this extremely desirable equipment, and having to learn only the military duties of a garrison soldier, are believed to be capable of being quickly transformed upon occasion into an effectual addition to the peace-time garrisons of the fortifications.

64. The expense to this department of the maneuvers has not been great. The total value of the powder shipped to all the posts for use in blank charges is $5,963, and this has not all been expended; its use can in future be regulated so as to considerably diminish the quantity required without any loss of beneficial effect. The cost of the special allowance of ammunition made for more thoroughly testing the material was $30,710.32. This, having accomplished its object, need not be again made to the posts of the two districts involved; while the cost of the ammunition allowed the companies for target practice, being a regular allowance, can not be considered an extra expenditure. The expense is considered to be small in comparison with the value of the opportunity afforded the officers of the department for association with officers of other branches of the service, both in the Army and Navy, in an effort in which all are so much interested, and with the advancement of the efficiency of the defenses, which would not have been attained without the impetus of the maneuvers.

PERSONNEL.

65. Existing law contemplates that vacancies in the Ordnance Department shall be filled by the detail of line officers of the same grade, who shall serve in the Ordnance Department for four years, and if below the grade of lieutenant-colonel shall not be again eligible for such detail until they shall have served for two years in the line. The law provides that the details shall be made under such system of examination as the President may from time to time prescribe. Since the passage of the act of February 2, 1901, there have been fifteen vacancies in the grade of first lieutenant in the Ordnance Department, and for these there have been six applicants. Recognizing that it was

not the intention to reduce the efficiency of the Ordnance Department or to lower the standard of attainment of its officers, the character of the examination to which officers have been subjected as a preliminary to detail for duty therein has not been changed from that which obtained prior to the passage of the above-mentioned act. This examination three of the applicants have passed. These officers have been performing duty in the department since June last. There remain twelve vacancies, for which there are no applicants. The inference is that the inducement of such service is not sufficient to tempt officers to prepare themselves for or to undergo the examination which is required. Under the laws in force previous to the passage of the act of February 2, 1901, second lieutenants of the line were eligible for transfer to the Ordnance Department upon the occurrence of a vacancy, and by such transfers they secured both a permanent appointment and an advance to the grade of first lieutenant. With these inducements there was no difficulty in securing candidates capable of passing the examination, the numbers being, in ordinary times, sufficient to produce competition, though in times of prospect of rapid promotion in the line and of small opportunity for preparation for examination the rate of application was so slow as to cause vacancies to stand for considerable intervals.

66. In order to supply officers for the urgent needs of the Ordnance Department three courses appear open for trial: the standard may be lowered; the details may be made arbitrarily; or the inducements may be increased.

67. To lower the standard would be to abandon the position which has been held since the formation of the department—that special aptitude and technical skill are required in the establishment and production of the weapons which the Army is to use in war. These requirements, which have been always recognized, have become increasingly prominent during the advance of this mechanical age, no characteristic of which has been more pronounced than the complete entry of its spirit into the production of implements and engines of war. War is competition; there is in it no standard of excellence for anything; it does not suffice to have good material, good soldiers, and good officers, if the enemy has better material, better soldiers, and better officers. The designer and constructor of ordnance must be a mechanical engineer, capable of computing the stresses brought upon the parts of complicated structures by the control of masses set in motion by the action of immense forces, which he must be able to estimate; he must master the methods of arranging and proportioning the parts of the structures so that they may withstand the forces of which he shall have previously determined the magnitude, and he must be familiar with the processes of the constructive arts which are concerned with the fabrication of his machines, in order that he may take full advantage of their possibilities and may not produce impracticable designs requiring the impossible. He must understand chemistry, whose science enters so intimately into the composition and action of explosives, his main source of supply of primary power, and into the art of metallurgy which supplies him with his usual material for utilizing and controlling the power. He must be equipped with the knowledge of the electrical engineer, that he may deal with the power which is finding increasing application in the operation of ordnance constructions and of the plants for producing them. His knowledge of these

subjects must not be merely that of the liberally educated man understanding the general principles of all professions, but that of the expert with details at his finger ends, in order that he may bring it effectively to bear upon problems which are continually before him. The necessity for the technical expert in the profession of the mechanical engineer is greater than in any other branch of the engineering profession, because of the closer relation therein between theory and practice; and among mechanical engineers the designer and constructor of ordnance must have especially sound mastery of principles, as he must oftentimes deduce the methods of their application to his art without the aid of the many handbooks and practical treatises which are so useful in the commercial practice of the profession. If it be asserted that no great proportion of ordnance officers have in the past been of the character which is described, the answer is that such fact would afford reason for raising the standard and not for accentuating an undesirable and dangerous condition by lowering it. Whatever excellence of material the service is blessed with is due to the presence among the officers of the department charged with its provision of individuals whose qualities approach the standard which is asserted to be proper.

68. If, recognizing the necessity for the provision of the fighting tools to be confided to a body composed of officers of special attainments, it should be attempted to secure the component individuals by a process of detail in which the wish of the officer would not be initiative or be consulted, it would have to be decided whether the officers picked out should be ordered for examination or should be detailed without examination. If the former, it would seem that the prospect would not be fair of obtaining officers able to pass a difficult examination which they had not wished to undergo, for which they had not prepared, and leading to duty which they had not sought. If the details should be made without examination, all the discrimination furnished by the latter would be lost, as would also be the case if the examinations were not difficult. The experience of over twenty-five years has shown that there are always among the lieutenants of the line officers capable of taking the examinations corresponding to the established standard, and always, also, enough of these to provide, among a number up to the requirements, appointees of the excellence of successful competitors. To detail officers without examination would not only cause the loss of the certain guarantee of standard attainment and of all the additional superiority resulting from competition, but would place in positions requiring the closest application and the intense interest of the devotee officers having problematical liking for the work, and without the stimulus indispensable for the successful pursuit of the engineering profession. It would also eliminate the very useful general review of student courses which the preparation for examination entails, and for which there is no time after entering upon the duties of the department. It would seem to undoubtedly lower the standard.

69. There remains the third alternative mentioned above, viz. that of increasing the inducements presented to lieutenants of the line for service in the Ordnance Department. This can be done by permitting the attainment of a temporary advance of one grade by such service and by providing for greater permanence of duty in the Ordnance Department, so that such duty may become practically the life work of the

officer. It is recognized that efficiency as an ordnance officer will be increased by occasional service with the troops who handle the product of the Ordnance Department, but the principle should be followed of regarding such service as an incident of the practice of the profession of the ordnance engineer, rather than to attempt such practice as an incident of service in the line; there would thus be no assault upon the detail system, of which the advantages are well perceived, but its regulation in such manner as to really accomplish its object of benefiting both the Department and the line. It should also be noted that no increase of expense would be entailed by making lower officers eligible for details to the grades in the Ordnance Department, as the number of these latter grades would not thereby be increased, and the total cost of the Department and of the entire Army would remain the same. By permitting the detail of second lieutenants for duty in the grade of first lieutenant in the Ordnance Department another very desirable object would be accomplished, viz. that of commencing the technical education of the officer at a youthful age. Under present conditions promotion in the Army is going to be exceedingly slow, and officers will spend a very considerable number of years in the grade of second lieutenant, not being eligible, under present law, for detail in the Ordnance Department until they shall have reached the grade of first lieutenant, and they will have had a long time in which to forget the scientific foundations of technical education which they may have acquired at the Military Academy or at other institutions of learning, also they will have passed the age at which young men embark with enthusiasm and zeal upon the study of a new profession.

70. In considering whether it is worth while to offer inducements for service in the Ordnance Department it must be borne in mind that its technical duties are not learned in the line, as are most of those pertaining to some other of the staff departments of the Army, and that special and laborious preparation for entry into the Department and close work, of a nature not attractive to one without special aptitude, are necessary, and do not tempt officers from a life which, if not less laborious, certainly offers a more agreeable combination of indoor and outdoor occupation than does that of the technical staff officer. As between the requirements of one or two years' service with the line between details for service in the Ordnance Department, it is certain that the longer period would break up an officer's service to an extent greater than is evident without weighing the effect which is produced by the second rolling around of each season of the year in turning the officer's ideas into a different channel and dimming the impression of what he has learned of technical methods.

71. Progressive development of ordnance material requires strenuous prying, with stimulated imagination, in advance of the known. It is a fact which must be admitted that there has not been in the past enough original scientific investigation upon subjects connected with the advancement of artillery science in the United States. This has been because of the lack of a sufficient number of officers possessing the necessary technical acquirements and because it has been rather the custom to take for granted in a vague sort of way that the designs governing the important structures which it has been necessary to produce have come, like the air we breathe, from some indefinite source with which the practical individual has not had to concern him-

self. One result of this state of affairs has been the abundant accusation of copying foreign productions, another the charge of being always behind other nations in the armament which has been provided for the service. That these accusations would be likely to become well founded has been recognized, and attentive study has been given to means for remedying the lack of technical knowledge by providing such a system of careful and regular instruction for its officers as has not heretofore existed in the Department. Any such effort would be frustrated by a system depriving the Department of the services of its officers as soon as they should acquire the beginnings of their special education, and giving them such service only under conditions which would prevent all ardor in its pursuit. The universal rule that special requirements should be accompanied by special inducements finds no exception in the military service.

72. An honest effort has been made to supply the Ordnance Department with proper officers under existing law. The effort has failed, and something else must be tried. The personnel of the arsenals has been reduced to the smallest number of officers which can carry on the administration of the business which is conducted at them, the details of which form the daily work which is imperative and to which that of possibly higher class must yield. As has appeared above, needed designs are not in progress for lack of officers, of whom there should be many more working upon problems of ordnance development. More vacancies will shortly be created in the Department. They can be speedily and advantageously filled by holding out something to the eligible body of officers, which contains abundant talent. This subject has been dealt with at much length because we can not afford to wait for the demonstration—in discovery in the time of need of the inadequacy of material produced during the period of preparation—of the reduced efficiency of the Department charged with the production of the most expensive and the most characteristic of war supplies. There being no immediate penalty for being wrong, either in making poor recommendations or in failure of action upon good ones, that sense of responsibility which recognizes the liability to be called to account is apt to be inactive, and needs the reenforcement of careful discussion.

ACTING ORDNANCE OFFICERS.

73. At each artillery post there is now an acting ordnance officer who is accountable for the ordnance property at the post and makes returns thereof to this office. It is recommended that in place of these officers there be assigned an acting ordnance officer for each artillery district, who should be a member of the staff of the district commander and should be charged with the proper supply and care of all the ordnance material in the district. The ordnance sergeant at each of the posts would have immediate charge of the stores at his post under the authority of the commanding officer, but would make no returns thereof. The effect would be to make the district the unit instead of the fort, and it is believed that the system would keep the district commander in closer touch with ordnance matters in his district and would result in uniformity of equipment and practice at all of the posts. The present unnecessary accumulation of considerable amounts of stores at points where they are not needed and the duplication of supplies

at points within easy distance of each other would be avoided, as such stores could be shifted within the district as required for the uses of the district as a whole. It is probable that acting ordnance officers of districts would best be relieved from most other duties during their incumbency, in order that they might be able to make careful study of all the ordnance requirements for the district, and be constantly on the alert in keeping on hand supplies sufficient in amount and suitable in character and themselves thoroughly informed as to their uses. There might be instances of too wide separation of the posts of an artillery district for the method proposed to be practicable, but it is believed that it would be convenient in most cases and that it would certainly result in reduction of the clerical labor required for correspondence and for the preparation of returns.

ISHAM SHELL.

74. This shell, as is known, is primarily designed as a torpedo shell for the purpose of carrying large charges of sensitive high explosives, and in the form presented is not intended or expected to penetrate armor plate. The special invention embodied in it is the means for firing it safely from a high-power gun with a large charge of powder, without detonating the explosive by the shock of discharge; and the special claim for efficiency, as compared with the explosion against armored structures of much larger charges of explosives, is that such explosives, being of less sensitive character, are not really detonated, while the sensitive high explosive carried by the Isham shell, being surely detonated against the plate, will produce destructive effect notwithstanding its much smaller quantity than that which has been used with other methods tried. Experiments already made with the shell having resulted in some differences of opinion as to its efficiency, the Board of Ordnance and Fortification, in the autumn of last year, made an allotment for firing three of these projectiles from a 12-inch service rifle; one of the shells, the first, to be weighted with sand but without explosive charge and fired into a sand butt with a pressure of not less than 50,000 pounds to the square inch, to test its structural strength; the other two shells to be charged with explosive gelatin and fired, one with a pressure as near as might be to 38,000 pounds to the square inch, and the other with a pressure as near as might be to 45,000 pounds to the square inch; the object of the test being to determine whether or not the board should make an allotment to procure armor plate as a target to test the service efficiency of the shell.

75. The first shell was fired upon May 19 last and was recovered from the butt in fragments of varying size, but it was the opinion of the board that it did not break up before reaching the sand butt. The experiment was considered inconclusive as to the structural strength of the shell, and authority was granted the inventor to construct three additional shells of somewhat greater strength, the first of them to be weighted with sand and fired under the same conditions as the preceding. This shell was fired, as arranged, on August 26 last. Upon recovery it was found to have suffered somewhat from the discharge, but not sufficiently so to indicate to the inventor inadmissible lack of strength of the remaining shell intended to be charged with the explosive. This is the present status of the experiments with this projectile; the total cost of which to date has been $16,632.78.

MANUFACTURE OF ORDNANCE MATERIAL UNDER CONTRACT.

76. During the fiscal year work has continued at the works of various manufacturing firms under existing contracts for ordnance material, and satisfactory progress has, with exceptions, been made.

77. Among the principal articles delivered under contract during the fiscal year may be mentioned:

3 12-inch B. L. rifles, model 1888, Bethlehem Steel Company.
5 10-inch B. L. rifles, model 1888, Bethlehem Steel Company.
24 5-inch B. L. rifles, model 1897, Bethlehem Steel Company.
8 15-pounder R. F. guns and (masking) parapet mounts, model 1898, Driggs-Seabury Gun and Ammunition Company.
30 6-pounder R. F. guns and parapet mounts (wheeled), model 1898, Driggs-Seabury Gun and Ammunition Company.
6 6-pounder R. F. guns, American Ordnance Company.
8 12-inch disappearing carriages, model 1897, Midvale Steel Company.
4 10-inch disappearing carriages, model 1896, Midvale Steel Company.
22 12-inch mortar carriages, model 1896, Rarig Engineering Company.
2,750,000 pounds steel forgings for cannon of 6 to 16 inch caliber (about equally divided between the Bethlehem and Midvale steel companies).

78. Also a large number of large and small caliber projectiles, fixed metallic ammunition for rapid-fire guns, miscellaneous forgings and castings, and other material. There was also purchased a considerable quantity of smokeless powder, which is reported upon under the appropriate head.

* * * * * * *

WILLIAM CROZIER,
Brigadier-General, Chief of Ordnance.

The SECRETARY OF WAR.

REPORT OF UNITED STATES PHILIPPINE COMMISSION.

PHILIPPINE COMMISSION,
Manila, November 1, 1902.

SIR: The Philippine Commission begs to submit this, its third annual report, for the year ending October 1, 1902. In previous reports the Commission has dealt with every phase of the conditions existing in the islands, and the steps taken by it or members of the Government for their improvement. On the 1st of September, 1901, the civil government became definitely established, with a civil governor and four departments, at the head of each of which was a secretary. It has seemed best to the Commission, in view of this organization, that the governor and the four secretaries should each make a report to the Commission concerning the transactions under the immediate executive control of each, the governor giving an account of the general conditions prevailing in the islands and of the work done by the bureaus reporting directly to him, and each of the secretaries giving an account of the work done by the bureaus included in his department. It has been thought wise for the Commission not to deal at length with the details of the transactions of the government during the past year, but only to refer to the general conditions and to certain subjects, the pressing importance of which may reasonably demand the attention of Congress at this session.

The insurrection as an organized attempt to subvert the authority of the United States in these islands is entirely at an end, and the whole Christian Filipino population, with the exception of a few thousand of persons who have settled in the Moro country in isolated towns, are enjoying civil government under the beneficent provisions of recent Congressional legislation concerning the Philippines. Much remains to be done in perfecting the civil government, in marshalling the forces of law and order against lawlessness and disturbances, and in teaching the people of the Philippine Islands not only that they have rights under the law, but also that they can not hope to enjoy such rights unless they acquire courage and independence sufficient to assert them against attempts by their fellow Filipinos to perpetuate the system of "caciqueism," or, liberally translated, "bossism," by which they have heretofore been completely governed, and under which they have enjoyed very little of personal liberty.

Comparatively few of the Filipinos who have been heretofore interested in politics as insurrectos or otherwise have felt an interest in teaching the common people their individual rights in respect to personal liberty, property, or the pursuit of happiness. This work of instruction in individual rights will require many years before the country is rid of the feudal relation of dependence which so many of the common people now feel toward their wealthy or educated native leaders and of the ideas underlying this relation. It is in the existence of this relation that much of the difficulty in the labor problem in these islands finds its source. The laborers under the Spanish régime were accustomed to do their work at the bidding of some superior, not from a motive of earning wages, but in obedience to the order of one entitled to command; and there rests upon this government and upon the American Government the duty of teaching the Filipino laborers the independence and dignity of labor under a free government, before they may do their best work and contribute as much as they should contribute to the development of their country. The organization of labor into unions in Manila, while brought about by a crack-brained insurrecto agitator for political purposes only, will, we hope, lead to an organization that may have much to do with inculcating this lesson.

No great work of organizing a government and establishing new conditions has ever met with more obstacles than the one upon which the Philippine government is at present engaged. The six years of war to which these islands have been subjected have naturally created a class of restless men utterly lacking in habits of industry, taught to live and prey upon the country for their support by the confiscation of food and supplies as a war measure, and regarding the duties of a laborer as dull and impossible for one who has tasted the excitement of a guerrilla life. Even to the man anxious to return to agricultural pursuit the conditions existing present no temptation. By the war and by the rinderpest, chiefly the latter, the carabaos, or water buffaloes, have been reduced to 10 per cent of their former number. The chief food of the common people of these islands is rice, and the carabao is the indispensable instrument of the people in the cultivation of rice as they cultivate it, as it is also the chief means of transportation of the tobacco, hemp, and other crops. The loss of the carabaos has reduced the production of rice in the islands 75 per cent, and the 25 per cent remaining is in imminent danger from the locusts which, very destructive in the Visayan Islands last year, are this year sweeping

over the rice fields of Luzon and threaten to destroy utterly the crops of those provinces of Luzon which may fairly be considered the granery of the Philippine Islands.

So short is the rice crop and so high has the price of rice become, estimated in the Mexican dollar—due both to the scarcity of rice and the fall of silver—that the Commission has deemed it necessary within the last few days to take the steps of purchasing 300,000 piculs (137½ pounds to the picul) of rice, to be sold at cost in provinces where the price of rice furnished through the ordinary commercial channels shall be exorbitant. The price of carabaos has risen from $20 Mexican to $200 Mexican apiece. The cholera, beginning in Manila in March of this year, has raged in the various provinces and has not yet disappeared. Vigorous measures were adopted to reduce its spread in the city of Manila and elsewhere, but it will probably claim in the archipelago 100,000 victims. It has greatly interfered with agriculture, and the sanitary restrictions, which were enforced with greater or less rigor throughout the islands have incommoded a people who do not sympathize with or understand their necessity. The suspicious timidity and superstition of these people were aroused by the ravages of cholera to the point of attributing the disease to poisonous powders dropped into wells by American soldiers for the purpose of destroying the entire populace, and the quarantine regulations were regarded by the more ignorant as a manifestation of hostility to the people by the American Government.

The Filipino people of the better class have received the passage of the Philippine act with great satisfaction. The provision for the legislative assembly has attracted much attention, and its passage has been interpreted as an earnest of the desire of the United States Government to test the governing capacity of the people and of the sincerity of its promises to extend to them self-government as rapidly as they shall show themselves fit for it. The extremists, of course, desire two popular legislative bodies instead of one, and others not so extreme are anxious that the legislative assembly shall be established immediately after the taking and publication of the census instead of two years thereafter. The Commission feels that it will be in a much better position to make recommendations upon the point of expediting the holding of the assembly after the census has been taken. The coming year, under the trying circumstances which now prevail, will show how much we may depend upon the conservative and law-abiding character of the controlling elements of the Filipino people.

The fluctuations in the value in gold of the Mexican dollar have borne heavily on the common people. Wages are in silver and they have not advanced with the cost of living, for the merchants and tradesmen much more readily make their prices respond to the fluctuations in the value of the Mexican dollar than do those dependent on wages and salaries for a living. The fluctuations in the value of silver have greatly interfered with business. The evils attendant on such fluctuations are fully set forth in the report of the secretary of finance and justice. We urge with as much earnestness as possible the necessity for immediate action by Congress in establishing a gold standard, and we recommend the adoption of the plan which was recommended by the Commission in its last year's report. The theory that the only persons prejudiced by the fluctuations in silver values are the civil servants of the insular government is wholly unfounded. Their con-

venience is somewhat affected it is true, but the present system, by which the official rate is changed to meet the commercial rate every ten days, much reduces their losses from the fluctuation, and if the only inconvenience caused by the fall in silver was to them, we should not feel called upon in this report to recommend a change. It is the inconvenience and suffering and injustice done to the common people and to the merchants and to the conduct of business on safe principles that require us to speak with as much emphasis as we can command.

The business of those islands is much more affected by exchange on London and New York than by that on Hongkong, Singapore, and Shanghai. The importations are largely from Europe and America. The merchants of Manila are not alone in their complaints against the effect of the silver standard on business. Their brethern of Singapore and Hongkong and of all the ports of China complain bitterly of the impossibility of carrying on business on wise and conservative lines as long as the prices of articles are to be subjected to such violent fluctuations as have affected the value of Mexican dollars in the last year, and seek to avoid loss as much as possible by making contracts and doing business on a gold basis. The insular government of the Philippine Islands has itself lost $950,000 in gold value during the last year from the fall of silver, changing the expected surplus into a deficit.

First. We respectfully urge that it is the duty of the American Government to secure to the Philippine people as stable a currency as that which is used by the people of the United States; and we are confident that this can be accomplished with a minimum of risk to the Treasury of the United States and the treasury of the Philippine Islands if the plan already recommended be adopted. A banking law with power to authorize the issue of paper currency on good security is very badly needed and should be included in any plan for relief of the monetary situation.

Second. We urge the reduction of the duties imposed on goods and merchandise imported into the United States from the Philippine Islands so as to make them not more than 25 per cent of the duties imposed by the Dingley law. The reduction of only 25 per cent, and the absurdly small effect of that reduction upon the trade between the islands and the United States, shown in the collection of little more than $11,000 of duties in five months, demonstrates that if any benefit at all is to be conferred upon the Philippine Islands by such action, the percentage of reduction must be largely increased. We feel confident that a reduction of 75 per cent will not result in a dumping upon the American market of either tobacco or other commodities so as perceptibly to affect that market; while, on the other hand, the ability to sell in the markets of the United States will be of the greatest encouragement to the woefully depressed agriculture of the Philippine Islands, under the conditions which we have described. The reduction of 25 per cent, instead of being an aid to us in winning the good will of the Philippine people, if it is not followed now by further reductions, will lead them to believe that we are merely going through the form of a concession, which amounts in fact to no concession at all; that the United States is merely "keeping the word of promise to the ear and breaking it to the hope."

We think that a 50 per cent reduction will not give any substantial relief, and that nothing short of 75 per cent will accomplish a useful purpose. It is a mistake to suppose that the severance of these islands

from Spain has made no difference in the markets to which their tobacco and sugar growers may look. On the contrary, with the separation from Spain, the sugar and tobacco growers have been deprived of markets which were of great assistance to them, and it seems only fair and just that the United States should substitute its own markets for the Spanish markets.

Third. Another matter which we desire to call to your attention, and through you, if it meets with your approval, to that of Congress, is the burdensome restrictions upon the investment of capital in lands and in mines in these islands. As the Government owns 65,000,000 of acres out of 70,000,000 in the archipelago, there is substantially no danger that the ownership of land here can be centered in a few individuals or corporations if the amount owned by any one individual owner or corporation is limited by law to 20,000 or 25,000 acres. The government of the islands is land poor, and the sale of land to individuals and corporations who will come in and invest their money in improving it is the greatest boon that could happen, not only to the Government, but to the people themselves. The requirements that no corporation shall own more than 2,500 acres stops absolutely the investment of new capital in the sugar industry and in the tobacco industry. It takes away any hope of bringing prosperity to these islands by the extending of the acreage in the cultivation of these two important products of the archipelago. It very much interferes with the investment of capital in railroad enterprises, because they are naturally connected with the possibilities of transportation of sugar and tobacco from the interior to seaports. It is not too much to say that there will be found in the long run to be no greater obstacle to the permanent improvement of economic conditions here than the present restrictions upon the amount of land that can be held by a corporation or individual. If an absolute sale of such large amounts to one corporation as 25,000 acres is objected to, then it would greatly aid in securing the investment of capital if leases of 30,000 acres for fifty, sixty, or seventy years could be granted to a corporation or individual.

There are also strong reasons for urging that the requirement that no person shall own an interest in two mining claims should be repealed. It will paralyze all enterprise and take away from prospecting capitalists all interest in the mineral wealth to be found here, unless some method of evading the restriction can be devised. The demoralizing effect upon a whole community of the nonenforcement or evasion of unwise laws need not be dwelt upon.

Fourth. We desire to urge that all the bonds authorized to be issued by the Philippine government, for internal improvements or otherwise, shall be made free from State, county, and municipal taxes in the United States. The government which is being carried on here is an experiment by the United States in a new field, and taxes upon the bonds which are issued to carry on the work of improvement here are an interference with this work and with an important agency of the United States. Congress has not deemed it proper to guarantee the payment of the bonds, which would have much reduced the interest to be paid on them, but if it will give to the bonds the exemption from taxation above mentioned, the insular government will be able to float them at a reasonable rate. This exemption has been provided for the bonds to be issued in the purchase of the friars' lands; and we can not see why any distinction should be made between

those bonds and bonds issued by the Philippine government for other reforms and improvements in the islands.

It will be found, should we be obliged to issue bonds subject to State, county, and municipal taxes, that not one dollar of value will probably be added to the personal property actually taxed in any State by reason of declared ownership of such bonds; and therefore by giving such exemption as we ask not one dollar will be withdrawn from the taxable property in a State, county, or municipality in the United States. With such exemption, however, administrators, trustees, and public corporations like banks, trust companies, and loan companies, whose investments are continually subject to the examination of the public assessor, will be able to invest and hold the bonds free of taxation, and will make a market for them which will insure their sale at a reasonably low rate of interest.

The questions growing out of the friars' lands, and of the former relations of the Roman Catholic Church to the government of these islands under the Spanish régime, which were made the subject of negotiation on the visit of the civil governor to Rome between him and the head of the Catholic Church, having been referred for further discussion and possible solution to conferences between the apostolic delegate of the Pope and the civil governor in Manila, are to be taken up during the coming winter. The civil governor has been advised by a letter from Archbishop Giambattista Guidi of his appointment as apostolic delegate and of his intention to visit the Philippine Islands. He will arrive in Manila about the 20th of November, and soon after that date the negotiations will be begun.

The Commission does not concur in the view that it would be wise to admit Chinese unskilled labor into these islands. The objections to such a policy are sufficiently set forth in the report of the civil governor to the Commission, and do not require further elaboration. The Commission does not concur in the view that there will not be a good supply of labor from the Filipino people. It believes that as conditions become more settled, as the Filipino labor is better organized, as the Filipino people are taught the independence and dignity of labor, the supply and efficiency of the Filipino laborers will become much more satisfactory than they are to-day. The Commission is of opinion, however, that there are not sufficient skilled laborers among the Filipinos to meet the emergencies in the constructions immediately necessary for the development of the islands. It believes that shipyards and other industrial enterprises would be established here were there a supply of skilled labor. Even if it were more expensive than the labor of the United States, these islands might successfully supply domestic needs in shipbuilding. This relief thus recommended need only be temporary. The introduction of a limited number fixed by Congress of skilled laborers, under bond by their future employers that they should be returned to China in five years, and that while here a Filipino apprentice should be employed for every Chinaman admitted and employed, would secure after five years a sufficient number of skilled laborers among the Filipinos not to require further Chinese assistance. We think that the details of such restrictions might safely be left to the Commission, and that the Commission might be authorized to impose a small head tax, not exceeding $50, on each Chinaman so admitted, to reimburse the government for the expenses of supervision and enforcement of the restrictions.

We respectfully urge, therefore:

1. The establishment of a gold standard in these islands upon the plan recommended by the Commission in its report of last year, and of banking corporation empowered to issue circulating bank notes under proper safeguards.

2. The reduction of at least 75 per cent of the Dingley rates of duties upon goods imported into the United States from the Philippine Islands.

3. An amendment of the Philippine act so that the limit upon lands which may be sold to or held by individuals or corporations from the public domain shall be increased from 1,024 hectares to 25,000 acres or, in the alternative, so that the government shall be given the power to lease for sixty years upon competitive bidding tracts from the public land aggregating in any individual or corporate lessee not more than 30,000 acres.

4. That the Philippine act be amended by repealing the limitation which forbids an individual or corporation from holding an interest in more than one mining claim.

5. That all bonds issued by the insular government under the authority of the Philippine act shall be free from State, county, and municipal taxation in the United States.

6. That an amendment be made to the Chinese-exclusion act giving power to the Government by law to admit a fixed and limited number of Chinamen into the Philippine Islands, who are certified to be skilled laborers, on the bond of the employer that for every Chinese skilled laborer employed he will employ a Filipino apprentice, and that he will return the Chinese skilled laborer thus introduced within five years after his admission to the country, and that he shall pay a head tax of not exceeding $50 for each Chinaman so admitted, to the insular government, to meet the expenses incident to the enforcement of these restrictions.

We beg to submit herewith the reports of the civil governor and of the heads of the four departments, together with the laws of the Commission passed since its last report, for transmission to Congress in accordance with law.

Very respectfully,

WM. H. TAFT, *Chairman.*
DEAN C. WORCESTER.
HENRY C. IDE,
Per W. H. T.
BERNARD MOSES.
T. H. PARDO DE TAVERA.
B. LEGARDA.

The SECRETARY OF WAR,
Washington, D. C.

NOTE.—Commissioners Luke E. Wright and José R. de Luzuriago, being absent from Manila, do not join in this report.

REPORT OF THE CIVIL GOVERNOR.

MANILA, *November 1, 1902.*

GENTLEMEN: I have the honor to submit a report to you on the general conditions in the islands and in respect to the bureaus which by law are under my direct supervision, as well as those which are in the department of commerce and police, and which, in the absence on leave of Vice-Governor Wright, the secretary of commerce and police, are temporarily also under my supervision. The report of the Commission of last year upon the subjects treated in this report covered a period ending the 15th of October, 1901, and this report will, unless otherwise specified, cover the year ending the 1st of October, 1902.

GENERAL CONDITIONS.

When our last report was submitted there was insurrection in the province of Batangas, where the insurgent forces were commanded by General Malvar, and in the adjacent provinces of Tayabas and Laguna; in the province of Samar, where the insurgent forces were commanded by General Lukban; in Cebu, where the insurgent forces were under the insurgent leaders Climaco and Maxilom; in Bohol, where the insurgent forces were commanded by the insurgent leader Samson; and in the island of Mindoro. Vigorous campaigns were begun in November and December by General Bell, in Batangas, Laguna, Tayabas, and Mindoro, by General Smith in Samar, and by General Hughes in Cebu and Bohol. In November and December the insurgents in Cebu and Bohol surrendered, and conditions of peace were so completely established that the Commission soon after received the province of Cebu from the military authorities, and by act numbered 322, passed December 20, 1901, restored the civil government in that province to take effect January 1, 1902; in Bohol the province was delivered over to the Commission early in 1902, and the Commission, by act of March 3, 1902, restored civil government there to take effect April 1, 1902. General Lukban, in Samar, was captured in February, 1902, and the entire force of insurgents in that island under General Guevara surrendered in April following.

By an act passed June 17, 1902, No. 419, the Commission organized the province of Samar, and established civil government there. In April of 1902, General Malvar surrendered with all his forces in Batangas, and by act passed June 23, 1902, the Commission restored civil government to that province to take effect July 4, 1902. By act No. 424, enacted July 1, 1902, the province of Laguna was organized into a civil government. This completed the organization of all the provinces in which insurrection had been rife during the latter part of 1901, except Mindoro. There were, in addition, certain tracts of territory occupied by Christian Filipinos that had not received civil government, either because of the remoteness of the territory or the scarcity of population. By act No. 337 the province of Nueva Viscaya was, on January 28, 1902, given a civil government. This province is situated in the northern center of Luzon, at the headwaters of the Cagayan River. It is quite mountainous, has about 60,000 non-Christian inhabitants and about 16,000 Christian Filipinos. It has a delightful climate, and in the valleys there is great richness. The fruits and vegetables of the temperate zone grow quite luxuriantly there.

On May 28, 1902, the Commission organized the province of Lepanto-Bontoc, also a mountainous province in the north-central part of Luzon occupied wholly by Igorrotes, and for which the same kind of a government as that of the province of Benguet was establishep by act No. 410. The districts of Infanta and Principe and the island of Polillo are on the east coast of Luzon, with very few towns, very sparsely settled, and at remote distances from Manila. It seemed wisest to include them in the province of Tayabas, which reaches from the China Sea on one side across to the Pacific on the other, and which has the towns of Maubau and Antimonan on the Pacific coast. These are the towns which the people of Infanta and Principe and Polillo look to as their bases of supplies when they buy anything, and as the places where they sell what they have to sell. By act No. 417, therefore, passed June 12, 1902, these three districts were included in the province of Tayabas.

The province of Paragua, including the north half of the island of Paragua and the Cuyos and Calamianes groups of small islands to the eastward, were embraced in a province known as the province of Paragua by an act passed June 23, 1902, numbered 422. The island of Mindoro, in which early in the year all the insurgents had been captured or had surrendered, was by act of June 23, 1902, act No. 423, incorporated with the island of Marinduque in the province of the latter name. In this way all the territory occupied by the Christian Filipinos, except a small district of Dapitan, the town of Zamboanga, the town of Cottabato, and the town of Davao, all in the island of Mindanao, was brought under civil government. In respect to the last-named district and isolated towns, which are so widely separated, and which have so small a population as to make their organization into a province under the provincial law impossible, the Commission has taken no definite steps except to organize the Filipinos of Zamboanga into a municipal corporation under the municipal code. They are generally under the control of the military commander of the Seventh Separate Brigade, which includes Mindanao, and can only be provided for in a comprehensive law for a civil or civil-military government of Mindanao.

The question what shall be done with respect to Mindanao is one which has not been definitely decided, first, because so much has had to be done with respect to the northern and Filipino provinces, and, second, because at present there is an unsettled condition in the Lake Lanao country. The hostility to the Americans does not reach beyond the Lake Lanao Moros. The Moros of the Jolo group, of Zamboanga, and of the Rio Grande de Mindanao Valley are all quiet, and all entirely willing to submit to American supervision. It is very possible that an arrangement can be brought about by which the Sultan of Jolo can be induced to part with such rights as he claims to have in the Jolo Archipelago, and that in this way questions which now present very perplexing difficulties with respect to ownership of privileges, rights, and lands may be obviated. The reports of General Davis, which are included in General Chaffee's annual report, are full of most interesting information, and must be carefully considered before a permanent arrangement shall be made for the administration of that part of the Philippine Archipelago. Meantime, I think it is wiser on the part of the Commission to postpone the consideration of the Moro question until we have passed legislation to meet needs that are more pressing through-

out the northern part of these possessions of the United States. For a great many years to come there will be no question of popular government in the Moro country; the Moros do not understand popular government, do not desire it, and are entirely content with the control by their dattos. Possibly far in the future the control by dattos will cease. There is room for material and industrial development among the Moros, and with their material improvement may come a change in their political views. For the present, however, it is necessary only to provide a paternal, strong, but sympathetic government for these followers of Mohammed.

GENERAL CONDITIONS OF THE FILIPINO PROVINCES.

The civil government has assumed responsibility for the preservation of order and the maintenance of law throughout the Christian Filipino territory of this archipelago at a time when the material conditions are most discouraging and present every conceivable obstacle to the successful administration of the affairs of 6,000,000 or 7,000,000 people. The war of six years since 1896 has greatly interfered with the regular pursuit of agriculture, which is almost the only source of wealth in the islands. Many years ago there was sufficient rice raised in the islands not only to feed the people but to export it to other countries. For a number of years before the American occupancy rice had been imported. The area of cultivation of the rice has been much lessened during the war and many fields which were formerly tilled are grown now with the cogon grass because of neglect.

The greatest blow to agriculture has been the loss of the carabao or water buffalo, upon which the cultivation of rice, according to the mode pursued in these islands, is wholly dependent. The war in some degree, and the rinderpest in a much larger degree, have destroyed about 90 per cent of the carabaos; and the natives—never very active in helping themselves—have simply neglected the rice culture, so that now these islands are compelled to spend about $15,000,000 gold to buy food upon which to live. The carabao is not so necessary in the cultivation of the sugar crop or in the cultivation of hemp. With respect to those two crops it is used chiefly for transportation, but in the case of the rice the cultivation is wholly dependent upon it. The rice crop in China and Saigon has suffered from the drought, and the price of rice is higher than usual throughout the Orient. In the Philippines it has risen from $4 per picul of 137½ pounds to $7 a picul, which is the present market price expressed in Mexican dollars. Part of this is due, of course, to the depreciation in silver, but the effect upon the natives, who have only silver, is just as disastrous as if it were due to some other cause. In addition to the loss of the carabaos, which has reduced the acreage of rice by 75 per cent below the normal, the locusts for the last two years have been very destructive upon the short crops which are raised. The native ponies which, while not strong enough to supply the place of the carabaos in plowing, are much used by the natives for transportation, have suffered severely both from the war and from the glanders and a disease which in India is called the "surra."

The cholera has swept over these islands with fatal effect, so that the total loss will probably reach 100,000 deaths. Whole villages have been depopulated and the necessary sanitary restrictions to avoid

its spread have interfered with agriculture, with intercommunication, and with all business. The ravages of war have left many destitute, and a guerrilla life has taken away from many all habits of industry. With no means of carrying on agriculture, which is the only occupation of these islands, the temptation to the less responsible of the former insurgents after surrender to prey upon their neighbors and live by robbery and rapine has been very great. The bane of Philippine civilization in the past was ladroness and the present conditions are most favorable for its growth and maintenance. Ladronism was in the Spanish days more prevalent in the Tagalog provinces of Bulacan, Nueva Ecija, Zambales, Rizal, or old Manila, Cavite, Batangas, Tayabas, and Mindoro, than in any other part of the archipelago. Cavite was famous as "the mother of ladrones." Many who were proscribed for political offenses in the Spanish times had no refuge but the mountains, and being in the mountains conducted a free robber life, and about them gathered legions not unlike those of the Robin Hood days of England, so that they attracted frequently the sympathy of the common people. In the Spanish days it was common for the large estate owners, including the friars, to pay tribute to neighboring ladrones. Every Tagalog province had its band of ladrones, and frequently each town had its recognized ladrone whom it protected and through whom it negotiated for immunity.

The high price of carabaos and of ponies produced by the scarcity has made ladronism a lucrative business. Both the ponies and the carabaos bear the indicia of ownership in the brands which are burned into their skins. The ladrones are exceedingly skillful in changing and altering the brands and even in changing the form of the horns of the carabaos, so that they are able to steal carabaos in Batangas, run them over into Cavite, change their marks and appearance, and then sell them in Manila without any great fear of detection or identification.

The warfare in Batangas was so thorough in its methods that the ladrones of that province were exterminated. In the province of Laguna the ladrones were driven out both by the Americans and the insurgents, General Cailles, of the insurgent army, executing many of them by military order; but Cavite has never been rid of them. In that province the ladrone leaders were given commissions in the insurgent army, and when the insurgents surrendered, they returned to their former profession. The same thing is true of Bulacan and of the mountainous district of Zambales. Ladronism has also been always found in the mountainous districts of the province of Rizal and in the towns of Caloocan and Malabon, a few miles north of Manila. Through these towns the ladrones have been in the habit of coming into the city of Manila whenever pursuit was hot and of remaining in concealment until the danger had passed. It is not certain whether in the present depressed state of agriculture, with the temptations to ladronism, that the constabulary will be able without the aid of the military to stamp it out. Were there any attractions to agriculture, were there prosperous conditions in the country, it would not be a troublesome matter to deal with; but when want and famine are staring people in the face the life of the freebooter offers to the desperate and the weak a very great attraction.

The natural discontent with the government when suffering is at hand, promoted as it has been by the cholera restrictions and the high prices of rice and other commodities which have been greatly enhanced

by the depreciation of silver, might well have caused a new breaking out of the insurrection; and, in my judgment, it speaks wonders for the ease with which this country may be governed in normal times, that we have had comparatively so little disorder since the surrender of the insurgent arms in April. Civil government was completely established in the Filipino provinces throughout the archipelago in July of this year, and since that time an American soldier has not been called upon once to discharge his weapon. The country has been policed by the constabulary, a force of some 5,000 or 6,000 men. It may be that as the conditions grow worse—for they are likely to do so before they grow better—it will be necessary in a province like Cavite, where ladronism seems inbred in the people, to proclaim martial law and even to call in the military finally to suppress it; but it is still hoped that this may be avoided. There are two provinces in the southern islands that are also badly infected with ladronism—one the province of Iloilo, where, however, the constabulary are rapidly stamping it out, and the province of Negros, where all the mountaineers have ever been ladrones. They have been much diminished in number and have received some severe lessons, but it will be a work of patience and time before they can be wholly suppressed. The ladrones of Iloilo are an organized band of cattle thieves, for all the cattle that they can steal they can sell at good prices in Negros, and some presidentes of towns are not above receiving profits from this business.

The failure of a crop for a year may entail great hardship and bring about a famine, but the coming year generally restores a normal condition of prosperity. Such, however, is not the present case in these islands. The loss of the carabaos can not be remedied in a year, and unless the greatest efforts are made either to replace these animals from other countries or to substitute methods of agriculture which shall prevent their being indispensable hereafter, the future for several years offers a gloomy outlook. I have instituted inquiries to learn the possibility of importing carabaos. It has not been possible to do this until the present time, because the previous importations of carabaos made within the last five months resulted only in the death of the animals brought here. The fields of the country are infected with the rinderpest, and animals turned into them have caught the disease and quickly died. The secretary of the interior advises me that the bureau of laboratories have succeeded in the production of a serum which will immunize 98 per cent of the cattle upon which it is used from the rinderpest for several years. This serum will be used upon several hundred cattle to determine whether it is really efficacious, and if it turns out to be so I shall call upon the Commission for authority to purchase as many thousands of cattle as possible, to distribute them among the provinces and to sell them there at cost. Meantime it is hoped that other agricultural methods will be taught to the people and the use of modern machinery made feasible. The experiments in Batangas, to which the secretary of the interior refers in his reports, are full of interest and instruction upon this point, but it is not necessary for me to dwell upon them.

The insurrection is over. It is true that the ladrones, though they live on nothing but cattle and rice stealing, and never attack American soldiers, and prey only upon their own people, do masquerade as insurrectos; but they recognize no authority and have no characteristics other than those of banditti. They have stirred up in some

of the provinces the organization of so-called secret societies for the purpose of securing agencies with which successfully to conduct their robbery and to sell the fruits of it. In other parts of the country, notably in Tayabas and in Samar, the restlessness succeeding the war, and the poverty and difficulty of living, have induced many of the ignorant and superstitious people to withdraw to the mountains, under the leadership of leaders who profess to have divine attributes and to have the assistance of God in the protection of their followers. The people thus drawn out become religious fanatics and robbers at the same time. Such a band was that of Rios in Tayabas, and its history is typical. Rios was the captain of an insurgent company under Colonel Zurbano, who commanded in Tayabas, and was one of the officers of General Cailles. Rios was a blacksmith, or blacksmith's assistant, entirely illiterate. Having committed a murder, and fearing punishment for it, after his surrender he went to the mountains, and was there able to summon a few people to his assistance. He gave it out that he would go to heaven, and returned and came down out of a tree in the presence of a large number of his followers bearing with him a box which he said if they assisted him he would open and confer on them what was contained in it—independence. He organized a town or two and preyed on all the other towns in the mountainous parts of Tayabas, and became such a nuisance that the larger towns formed companies of volunteers, and they, with the assistance of the constabulary, so harried his followers that most of them are now dispersed and surrendered; and he is in hiding with only one or two persons.

The picture that I have given of the depressed condition of agriculture, and the tendency to ladronise in the Tagalog provinces and in some of the Visayan provinces, does not apply to those provinces in which hemp is the chief product. They are wealthy and prosperous, and while their food costs them more than it used to, they have money enough with which to make improvements, and schoolhouses are being built, roads are being constructed, machinery—agricultural and of other kinds—is being introduced, and there is every evidence of a decided forward movement. This is especially true of the province of Albay, which is the largest hemp-producing province in the islands. Throughout the rice and Tagalog provinces, however, we must expect disturbances from time to time from ladrones and their assistants, the Katipunan societies. In the northern provinces of Luzon, in Ilocos Norte and Sur and Union, and in Cagayan and Isabela, conditions are much less disturbed by ladrones. The provinces depend more on the tobacco and corn crop than they do on the rice crop, and the Ilocanos and others who live in the provinces were not in the past so much given to ladronism. On the whole, however, there is before us a year of the hardest kind of work relieving the people from the hardship and suffering that are likely to follow the failure of the rice crop, and in suppressing ladronism and other disturbances due to economic distress.

The wealth of these islands must always be in their agricultural products, and when more than three-fourths of their chief food crop is wanting, it is to be expected that the market for the sale of goods from foreign countries will not improve. In the face of these most distressing conditions, however, the importations into the islands for October, 1902, were greater than ever before in their history for one month. It has been suggested that this growth in importations is due

chiefly to an increase in rice, but the statistics when examined do not bear out this interpretation of the facts. The rice imported in October of last year was about 20 per cent of the total imports. The rice imported for the same months of this year is not more than 18 per cent of the total imports. The figures show that for the year ending June 30, 1902, the imports, exclusive of quartermasters' stores, of all goods were $41,000,000, while the exports were about $27,000,000. While $1,100,000 of this is explained by the greater importation of rice, the remainder can only be explained by the additional investment of capital in business, in equipment, and in construction. In the fiscal year 1900 the excess of imports over exports was $1,130,305; in the fiscal year 1901 it was $6,257,321, and in the fiscal year 1902 it was $13,896,477. Capital has seemed, because no very large enterprises have been undertaken, to be timid in coming here, but in fact it has come in a small way in various branches of business, so that the aggregate is very considerable.

The explanation of the greater amount of imports over exports from the islands is not to be found chiefly in the fact that much money has been brought here from America through the army and its payments. Doubtless that has something to do with it, but this cause was necessarily much more effective in the year ending June 30, 1901, than it was in the year ending June 30, 1902, because the army in the islands was being rapidly reduced in size during the year and the expenditures were considerably less in that year than in the previous year; and yet the imports increased nearly 35 per cent in the year 1902, and the total business of the islands increased from $59,000,000 in the fiscal year 1901 to $69,000,000 in the year 1902. Of course the change in tariff increased the amount of importations. That was its purpose, but it does not diminish the importance of the fact that business and the investment of capital have shown a steady increase. That they would have shown a much larger increase had agricultural conditions been only ordinarily favorable goes without saying. For the current year, I think we may anticipate a considerable reduction in imports and revenue. Such, at least, is the opinion of competent brokers, merchants, and importers. The prostration of agriculture is too great. The savings of the people will be expended in buying food.

Among other ills from which this country is suffering is that of the fluctuating currency. The evils of this have been dwelt upon in the report of the secretary of finance and justice and need no emphasis from me. I may be permitted to say, however, that the depreciation in silver has greatly increased the apparent cost of living to the very poor, and has added much to the causes for their discontent with present economic conditions. With all these woes which have come to this country, the Filipino people look to the American nation for the very great aid which will be furnished them in a better market for their products of sugar and tobacco by reducing the Dingley rates to not more than 25 per cent thereof and by giving the islands a stable gold-standard currency.

THE LABOR QUESTION.

The complaint of the American and foreign merchants in these islands that the labor to be had here is altogether inadequate has become acute, and the chambers of commerce representing the American, Span-

ish, English, German, and other foreign interests, have sent a representative to the United States to invite an amendment to the present Congressional legislation which extends the Chinese exclusion act applicable to the United States to these islands, on the ground that it is necessary to admit Chinese for the business development of this country. On the other hand, it is quite apparent from the declarations of the Federal party and other political organizations in the Philippines, and from the vigorous manifesto of the only labor organization in the islands, that there will be much opposition on the part of the Filipino people to the further admission of the Chinese. That this opposition has been chiefly due to the competition which the Chinese have offered in the matter of stores and trading is obvious to anyone who has looked into the question; but it would be unwise to infer from that that the introduction of Chinese as laborers here would not be a very unpopular policy on the part of the Government.

The Chinese laborer becomes a merchant within a year or two after he reaches these islands, and then begins a competition with the Filipino tradesman which in the end drives the Filipino out of business. Were there unlimited Chinese immigration into these islands, I do not doubt that the tendency would be to relegate the Filipino to the position which the Malay occupies in the Straits Settlements. Most of the avenues of business would be commanded by the Chinamen, as they now are in Singapore and the Straits Settlements, and the islands would ultimately become rather a Chinese country than a Filipino country. It is doubtless true that were the doors opened and the Chinamen allowed to come in freely, it would tend toward a much more rapid commercial and industrial development of these islands than we are now likely to have; but in this respect I think the merchants and others interested would be disappointed in the trend which affairs would take. It has not been possible in Borneo to introduce the Chinaman into the fields; he has declined to become a farmer or a farm laborer in that island, and as the conditions are very similar to those which prevail here, we may expect the same result. There are to-day, although there may be 100,000 Chinemen in the islands, but very few engaged either in farming or in laboring upon farms. The attention of the Chinaman is given either to coolie labor or skilled labor in cities or to the tending of stores and to commercial business. It is quite possible that the admission of Chinamen would reduce the wages of the stevedores, of the domestic servants and of coolies in the cities, but there is grave reason for doubting how efficient the Chinaman may be in the carrying on of farming operations.

During the year 1902 there has been a movement for the organization of labor in the city of Manila, which doubtless will spread to other parts of the islands. It has been regarded, because of abuses which crept in, as an unmixed evil. I can not think it to be so. If properly directed, it may greatly assist what is absolutely necessary here—to wit, the organization of labor and the giving to the laboring class a sense of the dignity of labor and of their independence. The labor organization in the city of Manila is very much opposed to the introduction of Chinese labor, and their declarations upon this point will find ready acquiescence in the minds of all Filipinos with but few exceptions. The truth is that from a political standpoint the unlimited introduction of the Chinese into these islands would be a great mistake. I believe the objection on the part of the Filipinos to such a

course to be entirely logical and justified. The development of these islands by Chinamen would be at the expense of the Filipino people, and they may very well resent such a suggestion. The merchants and others who wish to invest here must take into consideration that labor is always likely for some time to be more expensive in these islands than it is in the United States per unit or product of labor.

Another phase of the labor question which does not seem to have had its proper weight with the merchants of Manila in their demand for the admission of Chinese coolies, is the great obstacle which such a policy would present to the opening by the United States of its markets to Philippine products. The existence of cheap Chinese labor in these islands would furnish the strongest and most taking argument to those whose interests lead to their opposition to the reduction of the tariff, that the reduction would bring American labor and its products into direct competition with cheap Chinese labor and its products in these islands.

The evidence with respect to the efficiency and quantity of Filipino labor is quite conflicting. I append as exhibits (F 1 and F 2) to my report the reports of Major Aleshire and Captain Butt, in the quartermaster's department of the United States Army, who have had large numbers of Filipino laborers under their control and who have been quite successful in making them useful. I append also the report of the municipal board, and report of the city engineer of Manila, who has employed a great many Filipinos constantly, and whose evidence, generally, supports that of Major Aleshire and Captain Butt. I append also, marked "Exhibit F," the last report of the engineer upon the Benguet road, which shows very great discouragement in the use of Filipinos for the construction of public works in the country. I ought to add on the other hand that the manager of the Manila and Dagupan Railway Company has informed me that his road was constructed by Filipino laborers almost entirely, except that at one time they brought in quite a number of Chinese for the construction of bridges and the working upon the piers. The Chinese did not prove to be satisfactory, and Filipino laborers had to be substituted. On the other hand, the merchants of Manila claim that they find it very difficult to secure satisfactory labor or constant labor, and that the rates of wages are absurdly high. It is to be taken into consideration that these comparisons of wages and labor are made as to the efficiency with American labor, and as to reasonableness of price with the very low wages paid to Chinamen in Hongkong. Everything is high in Manila. The cost of living is very high, and it is not surprising that the cost of labor should have risen. The very great increase in the foreign commerce and coastwise trade in these islands, together with the needs of the army and the insular government, has caused a corresponding increase in the demand for all kinds of labor in and about commerce, so that the increase in wages and failure of the local labor supply are easily understood.

I do not think it would be just to the Filipinos, or a proper course for America in the development of this country, to do more than to extend to the Commission the power to admit, upon reasonable restrictions, a certain limited number of skilled Chinese laborers, who may contribute to the construction of buildings and the making of other improvements, and who at the same time by their labor may communicate to Filipino apprentices the skill which the Filipinos so easily

acquire. Such skilled laborers might be admitted under bond of their employers that they shall be returned to China at the end of three or five years, the bond containing a provision also that for every Chinaman imported and employed a Filipino apprentice should be employed. Further than this it seems to me that it would be unwise to go. But such a provision would probably bring about the establishment of shipyards here and other enterprises that now are impossible in the Philippines because the proper skilled labor is not to be had.

I am myself by no means convinced that Filipino labor may not be rendered quite useful. The conditions of war and of disturbance throughout the islands for six years have led the men to form loafing and gambling habits and have interfered with their regular life of industry. Where such restlessness prevails industry is apt to be absent. The Filipino laborers must be given three or four years before an intelligent and just verdict can be pronounced upon their capacity for effective labor. I am confident that it will be greatly better than the suffering merchants of Manila anticipate.

A just view of the future of labor in these islands can not be taken without considering the dependent condition of the Filipino laborers in Spanish times. Much of the labor was then forced, and there was not a single circumstance that gave dignity to it. The transition from such conditions to one where the only motive is gain must necessarily be attended with difficulty; but when the laborer shall come to appreciate his independence, when he shall know that his labor is not to be a badge of peonage and slavery, when American influences shall make him understand the dignity and importance attaching to labor under a free government, we may expect a great change for the better in the supply and character of labor.

THE FRIARS' LANDS.

On my return to the United States I was directed by the President and the Secretary of War to visit Rome and confer with the Pope on the subject of the purchase of the friars' lands in these islands, and the possible withdrawal, at the instance of the Pope, of the Spanish friars from the Philippines. The result of those deliberations is contained in the correspondence between Cardinal Rampolla, the papal secretary of state, and myself. I have submitted that correspondence unofficially to the members of the Commission, but as it has already been forwarded to the Secretary of War, and should be made public, if at all, by either the Secretary of War or the President in his communications to Congress, I do not feel justified in inclosing it as an exhibit to this report, and have only to say concerning the visit to Rome and the negotiations there that I believe they will tend to bring about a much earlier and a much more satisfactory solution of the difficult questions at issue between the Roman Catholic Church and the Government of the United States in these islands than if the visit had not been made and the conference had not been had.

OFFICE OF THE EXECUTIVE SECRETARY.

The executive secretary presides over that office, which by the terms of the law was designed to relieve the governor from the routine executive work. It has been found possible to do almost all the

clerical work of the four departments, as well as the governor's office, through the executive secretary and his subordinates.

Mention has already been made in a previous Commission report of the excellence of the work of Mr. Fergusson, the executive secretary, especially in his marvelous power of interpreting to and from English and from and to Spanish during the trip of the Commission through the provinces to organize them. Mr. Fergusson is now in the United States on leave and his place has been taken by the assistant executive secretary, Mr. Beekman Winthrop. I can not speak too highly of the excellence of Mr. Winthrop's work. The intense interest that he takes in the dispatch of business, the amount of responsibility that he saves the civil governor and the heads of the departments, form a reason for constant congratulation; and the work which he has done in the preparation of the very detailed appropriation bills is worthy of the highest commendation, and entitles him to the unqualified approval and gratitude of the hard-working members of the Commission.

It has been suggested by Mr. Winthrop that it will be possible in the near future to unite in the office of the executive secretary the clerical work and the translating, which has now to be done in the office of the Philippine Commission. As the executive secretary's office and the Philippine Commission office are in the same building, this may prove to be not only a practical but an economical suggestion. No one but one familiar with the work of the two offices can realize what the burden of clerical work and of translation and interpretation is in the conduct of the business of the Government.

The functions and operations of the executive secretary's office are admirably set forth in the report of Mr. Beekman Winthrop, which is here appended, marked "Exhibit A."

PROVINCIAL GOVERNMENTS.

Conditions changed so rapidly during the last year in the provinces that the statement made in the annual reports of the governors in January, 1902, gives hardly a fair picture of their conditions at present. It would seem wise to change the time for the annual report of the governors from January to September. Many of these annual reports filed in January, 1902, are included in the evidence taken by the Senate Committee on the Philippines, but as the reports were made subsequent to the last report of the Commission, it seems proper to include them as exhibits to this report, and they are hereto attached as "Exhibit B."

The provincial governments have upon the whole worked well. Their financial condition is very fully set forth in the report of the secretary of finance and justice, and even more in detail in the report of the auditor, which is made an exhibit of the secretary's report. A sufficient surplus over the current expenditures of the government has not been accumulated in many of the provinces to make substantial improvements in the roads and bridges, and it is very possible that contributions from the insular treasury will be necessary to bring this about.

The land tax has not added greatly to the income of the provinces, and was not expected to do so, because the limit of per cent of the tax was made so low. Under no circumstances is the provincial board, or are the municipal councils together, able to tax any land

in the provinces, in the aggregate, more than seven-eighths of 1 per cent of its value. The assessment of the land tax has been made generally through the islands. As might have been expected in the introduction of a new system of taxation, the assessments have been quite defective. Local officials have permitted their friendships and enmities to influence in an absurdly grotesque way their assessment of property, and the persons injured, not being sufficiently advised of the time limited for appeal, have failed to appeal within the required period, and lost their rights thereunder. It will be very necessary, therefore, to give everyone an opportunity to have the assessment reviewed; but it has been a great step to have the assessment taken, and it is not at all impossible to remedy much of the injustice which has been done, by additional curative legislation.

In some of the provinces there is considerable complaint against the land tax, and we find it chiefly in those provinces where there are extensive landowners, who never have been used to paying any tax upon their lands at all and who seize upon the present discontent with reference to agricultural conditions to raise a cry against the land tax with the hope that the system may be wholly abolished. In some cases the provinces, which are evidently in bad condition, have been relieved from the land tax for one year. This has been the case in Batangas and Samar. It is possible that the conditions of agriculture are so very bad in many of the provinces that similar relief will have to be granted for the coming year. But that a land tax, as a system, must be continued in this country, if the provinces are ever to be efficient governments, is certain.

There has been great difficulty in filling the offices of supervisors in the provinces. The salaries are not such that we can secure the services of any but the younger engineers, and when they find that the resources of the provinces are not such as to justify large improvements they frequently lack energy and do nothing. This is partly accounted for by the fact that heretofore they have had no central supervision, as the treasurers and provincial fiscals have. I am clear that the work of the supervisors will be greatly improved if they are put under the chief of the bureau of engineering and construction and a particular assistant of that officer is charged with the duty of visiting the provinces and supervising their work. The system of supervision by the insular treasurer over the provincial treasurers and of the promotions which he has secured for those who have done their work well has made the provincial treasurers a very efficient body of men. They have very heavy labors, and these labors are discharged generally in a satisfactory way. A similar result can doubtless be brought about in respect to the supervisors. The fiscals have been put under the supervision of the assistant attorney-general and supervisor of fiscals. The poor ones are being weeded out and the provincial governments strengthened.

The native governors on the whole have proven to be quite satisfactory. They take great pride in their provinces, and with the exception of two or three who seem to be listless and fearful of making enemies, they are exerting all their influence, which is very great among the people, to industry and law-abiding habits. It will probably be necessary to remove two or three governors in whose provinces there is too great looseness of administration and too much lawlessness, in order to point out the responsibility that a provincial governor should have in

such matters. The provincial governor is the disciplinarian of the municipal presidentes, and as such is therefore able greatly to improve the conduct of affairs in the municipalities. If he has a number of friends in the offices who do not realize their responsibility to the public and are not disciplined because of the governor's friendship, it is very easy for the province to fall into bad condition. If, however, he uses his authority for good government, as many of them do, he can retain a very strict control over the entire population for good.

It will probably be necessary in some of the smaller provinces to dispense with the office of supervisor by uniting it with the office of treasurer, because the salary that would secure a good engineer as supervisor can not be paid. The organization of the provincial boards of health is properly treated of in the report of the commissioner of public health under the secretary of the interior. Suffice it to say that this has added one more to the list of provincial officers. The recent change in the school law provides a division superintendent for almost every province, his salary to be paid by the insular government. This makes another provincial officer whose services may be used in the general government of the province when occasion shall require. It has been proposed, in provinces where there is no supervisor, to make the division superintendent of schools a member of the provincial board. I believe that this plan would work very well. The power of the provincial boards in matters of health and education and in assisting agriculture have been somewhat added to by legislation, but sufficient time has not elapsed to be able to give a judgment upon the wisdom of these provisions.

CIVIL-SERVICE BOARD.

The report of the civil-service board shows that it has been most active in the conduct of examinations and the furnishing of eligible persons for the public service. The principle of appointment according to merit, as shown by examination, and of promotion according to merit, as shown by experience and examination, is carried out conscientiously by the board. The necessity that the government is under of securing many of its civil servants from the United States by examination under the auspices of the United States Civil Service Commission, of course delays the filling of vacancies and embarrasses the conduct of the government. This embarrassment and delay, however, are reduced as bureaus become better established and the number of new employees that are needed becomes less. It is entirely natural that heads of bureaus should think themselves better competent to judge of the kind of men needed for the vacancies under them than the civil-service board; and this is especially the case with new bureaus where the head of the bureau has had no experience in the selection from eligibles presented by the civil-service board. The provision that no money can be paid by a disbursing officer to a person not appointed in accordance with the civil-service law has been sufficient to restrain any violation of it. It has become so well understood that the merit system prevails in these islands, and has a wider application and more practical enforcement than in any part of the United States, that there is no political pressure from the United States for the appointment of persons to the classified service.

The body of civil-service employees engaged in public school teach-

ing is still not included within the rules of the civil-service board. Some 200 of the legalized quota of 1,000 teachers are to be appointed in the near future. As soon as the quota has been filled it is understood to be the intention of the Commission to provide that thereafter no teachers shall be employed who do not pass a civil-service examination.

During the next year it is hoped to introduce into the civil-service law provisions by which the learning of native dialects and the learning of Spanish by American employees will be encouraged, provisions by which certain promotions can only be obtained after passing an examination in certain native dialects, and also for increasing the salaries of employees who are able to pass an examination in such dialects or in the Spanish language without promotion. Such changes, it is thought, would make the body of our English speaking civil servants much more efficient.

Particular attention is invited to the satisfactory report of the civil-service board, a copy of which is attached as "Exhibit C."

INSULAR PURCHASING AGENT.

The office of the insular purchasing agent was created for the purpose of economy and efficiency in the purchase of necessary supplies, both for all bureaus and departments of the insular government, as well as for the provincial and municipal governments. When the office was first organized, with the requirements that all goods should be purchased through it by the various branches of the government, the utmost confusion reigned in the office because of the immense number of requisitions and the inability of the purchasing agent to meet them promptly. During the last year, however, order has been brought out of chaos, and it is now possible for any bureau to secure promptly what it desires through the insular purchasing agent. He has a large stock on hand of things likely to be needed by the various bureaus and provinces, and he has the means of securing quickly those articles which he has not on hand.

The question of how goods shall be bought in the United States, whether through a purchasing agent stationed there or by correspondence through the insular purchasing agent, is one that has not been free from difficulty. At present the government has an insular purchasing agent in the United States, but my recommendation is that this arrangement be terminated on the 1st of January, and that thenceforth the insular purchasing agent shall buy directly from the manufacturing houses in the United States. It is essential that quite a large fund be kept in the United States with the disbursing officer of the insular government there, and that a record of all orders and purchases be made in the Bureau of Insular Affairs of the War Department. It is thought that the suggestions of the insular purchasing agent will accomplish all these purposes and that they should be adopted. The policy of having one man buy everything for all branches of the government is apt at times to be too rigid, and the amendment which authorizes the civil governor to dispense with this necessity and allow heads of bureaus or other officers to make exceptional purchases directly has relieved the system from objections which it was at first thought might lead to its abolition.

The extent of the dealings of the insular purchasing agent is shown by the fact that his purchases from August 1, 1901, to October 1, 1902, aggregate $1,416,633.91, and his total sales have been $1,252,012.36,

and his total property on hand amounts to $263,465.14; all in United States currency.

The report of the insular purchasing agent is attached hereto, marked "Exhibit D."

THE CITY OF MANILA.

The plan for the government of the city of Manila has not been changed during the present year, and the government has been carried on successfully. The city of Manila is well policed. It is impossible in a country where gambling is so much a vice to prevent corruption from affecting the police force in some degree. The number of the force has been considerably reduced since its organization under the military government, and it is hoped that, as the Filipino policemen become better trained, it may be still further decreased. The work of giving the city an adequate water supply and a proper sewer system has not yet begun. The Philippine act enabled the Commission to issue bonds for $4,000,000 gold to better the water supply and to establish a sewer system. It is believed that a competent engineer has been engaged in the United States for this work, but the plans can not be adopted until careful study has been given them and they have been submitted to a board of engineers.

Much difficulty has been experienced in securing proper stone for macadam, the quarries at Binangonan having become exhausted. It is now thought that the Talim quarry on the island of Talim, in Laguna de Bay, which is owned by the government, will furnish very good material. The city has experienced the same difficulty in securing engineers that has confronted the insular government with respect to supervisors in the provinces, and much delay is incident to the failure promptly to procure them. A very considerable amount of work has been done in improving and cleaning streets and in putting the city in better sanitary condition. Four very handsome markets, an important feature in the life of the common Filipino people, have been erected in different parts of the city and are the source of a considerable income to it. A satisfactory steel bridge, called the "Santa Cruz" bridge, has been constructed across the Pasig and adds much to the public convenience.

Much, however, remains to be done. I desire to call attention to the fact that the Philippine act in authorizing the issue of bonds by the Philippine government for use of the city of Manila does not provide that those bonds shall be free from State, county, and municipal taxes in the United States, though the act does so provide with respect to bonds to be issued to pay for the friars' lands. Such an exemption of all Philippine bonds from State, county, and municipal taxes will enable us to sell them at a very considerable lower rate than we can place them at under present conditions, and I suggest that we recommend to Congress that all bonds issued by authority of the Philippine act shall be free not only from Philippine and United States taxation, but also from State, county, and municipal taxation in the United States. This government is an instrument of the United States in working out a great and most important problem. It is an agency of the United States, and it seems proper that the successful maintenance of such an agency should not be embarrassed by State taxation upon the bonds which, in the prosecution of the purposes of the United States, it is obliged to issue.

The land tax in the city has been levied and collected. The work of assessing the value of the real property has been onerous, and many complaints are made of the injustice of the assessment in the outlying portions of the city. It seems probable that injustice has been done in estimating what ought to be assessed as acre or hectare property by the square meter, and a reassessment or an opportunity for reassessment ought to be furnished by legislation at once. An examination of the report on assessments and collections will show that while there are in the city real estate and improvements assessable for taxation amounting to $41,005,190.60, there is nonassessable real property in the city of the value of $25,502,329.54, of which $13,384,388.60 is the value of public property, not including the streets and parks, and $12,117,940.94 is the value of church property, which, under the law, is exempt. Of this church property but $2,737,423.90 is the value of land and improvements belonging to the archbishop or the Roman Catholic Church proper, while the remainder, $9,380,517.04 is the value of property belonging to the religious orders, religious schools, and convents.

The subject of public instruction in the city of Manila has been sufficiently covered by the report of the secretary of public instruction.

The fire department of the city is rapidly being rendered as efficient a service as there is in the Orient, and will, when completed, in the course of a few months bear comparison with the fire departments of cities in the United States. The full report of the municipal board is hereto annexed, marked "Exhibit E." Especial attention is called to the very large number of new buildings that, in spite of the very high prices of labor and material, are being erected in the city.

BENGUET.

The Commission has been very much disappointed in the difficulties it has encountered in the construction of a wagon road from Pozorubio in the province of Pangasinan to Baguio in the province of Benguet, a road which is essential to the use of Benguet as a site for a sanitarium and for the recuperation of the health of civil employees. The engineer, Captain Mead, who made the first survey of the road and entered upon its construction, made an error in placing the road at such a level that it had to be constructed through friable rock at a great height above the bed of the Bued River. On this grade it was most difficult to maintain a proper slope for the fills, and the rainy season with its accompanying landslides washed the road away along 5 miles of its course. A different course for this distance has now been adopted, carrying the road nearer to the river along a course where it is chiefly hard rock, and where there is no difficulty in maintaining a proper slope even against the hard rains of the wet season. The road has been constructed from Pozorubio on the one hand and from Baguio on the other, so that the two ends are within 12 miles of each other, and it is hoped that during the coming winter a horse trail can be constructed to join the two parts and that by next summer the whole wagon road will be completed. The original estimate for the cost was $75,000, but the actual cost has already greatly exceeded that sum and it is doubtful whether it can be constructed for less than $300,000. The work on the road was stopped for three months on account of cholera. I append the report of the engineer in charge of

the work and call attention to the difficulties which he has encountered in the employment of labor. The report is marked Exhibit F.

DEPARTMENT OF COMMERCE AND POLICE.

I come now to the bureaus which are included in the department of commerce and police.

CONSTABULARY.

The first and for the time the most important bureau of this department is that of the constabulary. Since the 4th of July, last, when the civil governments were established throughout the Christian Filipino provinces and the military control therein ceased, not a single shot has been fired by an American soldier in the preservation of peace and order, and no request has yet been made of the commanding general for assistance in the suppressing of lawless violence or disturbance. The preservation of peace and order has been wholly committed to the constabulary and to the municipal police. The constabulary number something over 5,000 men and the appropriation bill passed for the ensuing quarter authorizes the increase of this number to 6,000 men. The municipal police generally are by no means well disciplined.

It was the intention of the Commission in passing the law providing for the organization of the constabulary that the inspectors should devote much of their time to the discipline of the local police, but the calls upon them for the suppression of ladronism and other disturbances have been so numerous that there has not been time or opportunity for the improvement of this important municipal arm of the forces of law and order. The towns, many of them, are so poor that it is impossible for them to support a large or even adequate police force. In order that the municipal police should be effective against ladrones it is necessary that they be properly armed with rifles. In a town, however, which can only afford five or six municipal policemen the distribution of rifles to the police only offers a temptation to large bands of ladrones to capture the police and take their rifles, thus increasing the number of arms held by the ladrones. In some provinces, notably in the provinces of Tayabas and Bulacan, the constabulary and the local police under the governor have worked together with great success. Ladronism in those provinces is being rapidly stamped out. In the province of Bulacan, Colonel Tecson, a former insurgent officer elected governor, has devoted his entire time and energy to the organization of a volunteer force, which has chased the ladrones to the mountains and out of his province so effectively that in a short time that province, which has always been noted for ladronism, will be freer from it than ever in its history. The arms for such volunteer forces are always distributed by the constabulary. In Tayabas the system followed was by volunteers from the towns. The authorities of the town induced the people of the smaller barrios living near the mountains exposed to attack from the ladrones to come into the thickly inhabited settlement, bringing their belongings, and leaving nothing from which the ladrones might secure sustenance; in other words, they have adopted a reconcentration policy on a small scale, and the effect of that has been to bring the ladrones in from the mountains to surrender in considerable numbers, and the province is being rapidly rid of

this human pest. The conditions in Cavite, however, have not been so favorable, and it is with the greatest reluctance that any rifles are distributed to the municipal police, because the sympathizers with the ladrones in the towns are so many that the rifles may be stolen.

There have been four desertions from the constabulary in Cavite which resulted in the loss of some six or eight rifles. The chief of the constabulary has deemed it wise to discharge twenty men enlisted in the neighborhood of San Francisco de Malabon and Imus lest they might also desert. The governor has applied for 300 Krag rifles for use with his volunteers, but it is doubtful whether there is a sufficient guaranty that these rifles will not find their way into the possession of the ladrones to justify the risk. In Zambales the governor, in an earnest desire to suppress Roman Manalang, a ladrone of ten or fifteen years' reputation, a murderer and a desperado, has asked for 50 rifles with which to arm a body of volunteers made up of the better educated and wealthy men of the province, in the confident belief that he may capture Manalang and end the lawlessness in the northern part of that province, of which the outlaw is the chief promoter. Judge Johnson, of the court of first instance, has sentenced to Bilibid Prison for long terms, from three to twenty years, about one hundred of Manalang's men, and this, it is thought, will have a quieting effect in that mountainous and most difficult province. The work of the constabulary has been so constant that time has not been given even to the thorough discipline of the enlisted men. Their work has been exceedingly heavy and burdensome, and, on the whole, the chief, the inspectors, and the enlisted men are to be, as a body, highly commended. There have been from a number of provinces complaints made of abuses by the enlisted men of the constabulary.

It is a fact so common that it must be noted that Filipinos of the less educated class with a little authority are prone to use that authority to oppress their fellow-Filipinos, and the abuses of the constabulary are almost wholly committed by individual members of that body when not under the immediate observation and control of American inspectors. Of course, the abuses of the constabulary are very grossly exaggerated by deliberate misrepresentation of persons whose sympathy and profit are with the ladrones, and who do not welcome the presence of the constabulary on any ground. Another difficulty has been a lack of tact on the part of some of the American inspectors engaged in the provinces. The authority which they exercise over the constabulary of the province, which generally is the only effective police body, is apt to make them feel independent of the governor of the province, especially if they are young and inexperienced; and when they do not think that they find in the native governor the active, energetic assistance which they are entitled to, they conduct themselves in a manner not calculated to conciliate the governor or to secure any useful cooperation by him. It has been my steady effort to convince these inspectors that next to dishonesty and cruelty a failure to show proper respect to the governor of the province and to accord to him the courtesy which the dignity of his office requires will be considered the greatest dereliction of duty of which they can be guilty and will be cause for instant dismissal. The chief of the constabulary has great difficulty in securing the proper material for provincial and other inspectors, but on the whole he has succeeded remarkably well.

The constabulary, because of the large number of posts in the islands, has proved to be the most efficient corps for the maintenance of a civil commissary and the distribution and sale of goods to civilian employees throughout the archipelago, and this has entailed great additional work upon the force. The constabulary are quite dependent upon the telegraphic system for efficiency, and therefore as the military turn the telegraph lines over to the civil government they are placed under control of the signal officer detailed for work in the constabulary bureau. Ultimately it is the purpose of the Army to turn over to the civil government all the telegraph lines. More progress has really been made in the development of telegraph lines than in almost any other commercial direction in these islands. It is possible now to reach by telegraph the capitals of all the Christian provinces except Romblon and Paragua, and it is also possible to reach all the principal towns of Mindanao and in the Jolo group. Romblon will soon be reached by cable and then only one Christian Filipino province will be beyond the reach of the central government by wire. Such facilities for immediate communication with the governors greatly promote the efficiency of the government.

Through the kindness of General Davis the old Spanish cavalry barracks, known under the present government as the "pony corral," has been turned over to the chief of constabulary for his headquarters. He proposes to maintain a reserve of constabulary of 150 or 200 men in the city of Manila, drilling them and keeping them here so that they may be used in any province where an emergency may arise. He will also organize, under authority of the appropriation bill for the quarter ending January 1, 1903, a constabulary band. The excellence of the work done by the constabulary, not only in its police but also in its civil, commissary, and telegraph lines, bears admirable witness to the exceptional executive ability of the chief of the constabulary, Capt. Henry T. Allen, of the Sixth Cavalry. His report is hereto attached, marked "Exhibit G."

BUREAU OF POSTS.

On July 1, 1901, there were 24 regular post-offices in the islands. On June 30, 1902, 66 had been added, and since the close of the fiscal year the number has been increased to 160. There has been an increase in the postal revenue of the islands of about $15,000, but of this $11,462 was from money-order fees, so that there was less than 3 per cent increase in the ordinary revenues. The expenses were 16 per cent greater. This was due to the fact that by act No. 179 it was provided that the registration and carriage of official mail of provincial officials from one point in the Philippine Islands to another should be free of charge. In the many extensions of civil government and the immense amount of mail transmitted for public purposes, it has come about that more than one-half the whole mail matter handled is governmental. There is an increase of more than 20 per cent in the bulk of the mail. The money-order service in the islands is becoming of great importance. Both Chinamen and natives are beginning to use it for comparatively large orders. In the United States the average money order is about $8, in the Philippines it averages $50. The remittances to Manila from the provinces to meet money orders issued during the year amount to $1,070,937.97, while the remittances from Manila to

the United States amount to $648,125. This shows the balance between the orders drawn both ways.

Another use which is being made of the money-order branch of the post-office department is as a deposit of funds. There is about $600,000 now deposited in the post-offices for safe-keeping. This, it seems to me, is a significant fact tending to show that it would be wise for this government to establish throughout the country postal savings banks. When we consider that there are no banks at all in most of the provinces, and that there is much insecurity in holding money, and when we know that a vast amount of silver is buried in the ground to avoid robbery by the ladrones and other thieves, we may justly suppose that the institution of postal savings banks would not only benefit those who now save money in this irregular way, but might induce others to save that which for fear of loss they now spend or waste. I respectfully commend the matter to the early attention of the Commission. The report of the director of posts is hereto attached, marked "Exhibit H." The postal service is by no means as complete as we hope to make it, and has not yet had the assistance of the new vessels of the coast guard and transportation bureau.

COAST GUARD AND TRANSPORTATION.

We have alluded in our former reports to the difficulties in carrying on this government presented by the absence of water transportation from one point to another and from one province to another and from one island to another throughout the archipelago. We foreshadowed our purpose in our previous report of purchasing fifteen vessels with which to meet the necessities of the revenue, postal, and constabulary bureaus, and of the provincial governments. The Commission contracted for the construction of ten vessels 148 feet long by 25 feet beam, and five vessels 140 feet in length by 25 feet beam. The bureau of coast guard and transportation was provided for by law and organized with a naval officer, Captain Marix, detailed as its head. Captain Marix has displayed commendable interest in the work of the bureau and has been most useful in guiding the Commission in the course to take in the establishment of an island coast guard and civil navy. He was authorized to make contracts with the firm of Farnham, Boyd & Co., of Shanghai, by which ten of the vessels were to be constructed by them, and with the Uraga Dock Company, of Uraga, Japan, by which the remaining five were to be constructed by that company. The vessels are to have at least 10 knots speed. Five of the steamers have been completed, two of them have been delivered and are most satisfactory, showing a speed considerably in excess of that fixed in the contract, and three are now on their way from Shanghai to Manila. All of the steamers are to be delivered in Manila before February. The added efficiency of all governmental operations which these steamers will give, no one can appreciate unless he is familiar with the difficulties that we now experience from a lack of transportation. It will doubtless be necessary for us to purchase additional launches and other vessels for local use, but the mainstay will be the fifteen vessels above described. They have been built with unusual strength to resist the heavy seas that prevail in these waters during the rainy season.

The bureau of coast guard and transportation is vested with the power and authority to complete the construction of light-houses and

supervise them. It is estimated that $200,000 will be needed to complete the construction of the light-houses which were begun by the Spaniards, and that this will take eighteen months. The great increase in trade requires new lights to be constructed according to a plan which is now being drawn up. The new lights will probably be constructed of iron framework, because this is cheaper than stone and affords quite sufficient resistance to the storms and waves. A school of apprentices has been established at Corregidor light-house in order that competent light-house keepers may be had. A report of the chief of the bureau of coast guard and transportation is attached hereto, marked "Exhibit J."

COAST AND GEODETIC SURVEY.

By an equitable arrangement between the United States Government and the Philippine government surveys are being made, under the supervision of the United States Coast and Geodetic Survey, of harbors and inlets of these islands and the coast. Considerable progress has been made, as will be seen by the report of the chief of the work in these islands. The report is appended, marked "Exhibit K."

FRANCHISES AND CORPORATIONS.

In the press of legislative work the Commission has not as yet passed a general railroad law or indeed a general corporation law, though both must be passed in the immediate future. A law has been passed providing for the granting of franchises for an electric street railway in the city of Manila, which invites competitive bids upon three points: The duration of the franchise, the fare to be charged, and the percentage of gross receipts to be paid for the franchise. Bids are being advertised for in Manila, New York, Washington, and Chicago. There is one syndicate on the ground, at whose instance the franchise law was passed after material modifications in the proposals made by it. It is not known whether the syndicate at whose instance this law was passed will now bid or not, but it is hoped that more than one bid will be received. The necessity for electric street railways in the city of Manila is most urgent. We have not yet had any proposals for railroad franchises, except a formal proposition from the Manila and Dagupan Railway to construct a line from near Calumpit in Bulacan to San Isidro, Nueva Ecija, and Cabanatuan in the same province, a distance of 71 kilometers. The Commission has not yet considered the wisdom of granting such a franchise, but has set the hearing of the petition at an open session for November 17.

COASTWISE TRADE.

On the 18th day of October, 1902, by direction of the Commission, I sent a telegram to the Secretary of War, requesting that the Executive order with reference to the coastwise trade in the Philippine Islands should be so modified as to permit the Commission to open it to all foreign and American vessels; that the transportation rates were so high as to unduly raise the price of rice and other necessary commodities, and that there was a possible pool for the maintenance of such rates. It turns out that there is no pool in the sense of a division of profits, but it is a fact that the transportation rates have been

advanced to a very high figure, though they were high before, and that this has been done by an agreement by all the persons engaged in the coastwise trade. As nearly all the steamers in the coastwise trade are owned either by Spaniards, Englishmen, or Chinamen, and as few, if any, Americans had seen fit to engage in this lucrative business, it did not occur to the Commission that there could be any objections to depriving the foreigners already in the business of the monopoly by allowing other foreigners to come into it. In view of the short food supply throughout the islands, the high transportation rates have a most direct effect in increasing the suffering by increasing the cost of transporting food from Manila and other bases of supply to the provinces. A bill has therefore passed a second reading and is awaiting reading in open session, throwing open the coastwise trade until the 1st of July, 1904, to foreign vessels. It is thought that the privileges granted to foreign vessels are sufficiently safeguarded in the act to prevent their being abused.

IMPROVEMENT OF THE PORT.

The improvement of the port works has been begun this year in earnest, and the amount of work accomplished will be seen by reference to the report of the engineer in charge, Major Sears, which is appended and marked "Exhibit L."

It will be necessary in addition to the breakwaters already projected to erect a breakwater from 2,000 to 3,000 feet in length to protect ships from the waves when the wind lies in a particularly southwesterly direction. This will increase the expense over the present contracts by about $1,000,000, making the total cost upward of $4,000,000.

CONSULTING ENGINEER.

The consulting engineer has been but recently appointed under a law defining his duties, but his office has not yet been organized, as it is expected to organize it, with a view to the supervision of provincial supervisors and the construction of public works in various parts of the archipelago. The preliminary report of Mr. Beardsley, the consulting engineer, is hereto appended, marked "Exhibit M."

NOVEMBER 10, 1902.

As this report has not yet been forwarded, it seems proper to me to add a short statement concerning a movement that may have an important bearing upon future conditions, and which may, perhaps, add much to the labor of maintaining peace and order in the archipelago.

Gregorio Aglipay is an Ilocano, and was an ordained priest of the Roman Catholic Church in these islands before the insurrection. During the insurrection he continued his priestly functions at Malolos and took such action as to bring him into conflict with the hierarchy of the church. What the merits of this controversy were I do not know. Subsequently he assumed the leadership of the insurrecto forces in Ilocos Norte and carried on a very active campaign in the mountains of that province. He was one of the last of the leaders to surrender with his forces in North Luzon. Since his surrender he has been quite active in spreading propaganda among the native priests against the so-called Friar domination of the church in these islands. The definite

refusal of the Vatican to withdraw the Spanish friars from the islands was made the occasion for the formation of the Independent Filipino Catholic Church. Actively engaged with Aglipay in this movement was Isabelo de los Reyes, the former editor of an insurrecto paper, published in Madrid, called Filipinas ante Europa, and an agitator of irresponsible and irrepressible character.

Padre Aglipay has secured the active and open cooperation of a number of native priests, 15 of whom he has appointed bishops, himself having the title of archbishop. He has held mass in many different places in and about Manila; his services have attracted large gatherings of people. Most of the churches in the Philippine Islands were built by the labor of the people of the respective parishes and devoted to the Roman Catholic Church; but the people have a sense of ownership, and when a majority of them separate themselves from the Roman Catholic Church and accept a new faith, it is difficult for them to understand that they have not the right at once to dispossess the priest of the Roman Catholic Church and place in custody and use of the edifice their newly made curé. In order to prevent constant recurrence of disturbances of the peace I have had to take a firm stand with the leaders of the movement by impressing upon them that forcible dispossession of a priest of the Roman Catholic Church, for years in peaceable possession of the church and the rector's house, is contrary to law, and would be prevented by the whole police power. The leaders of the movement assure me that they have no desire to violate the law and wish to keep within it, but that their followers at times are hard to control. I have said to them that if they claim title to the churches they may assert it through the courts, and if successful will secure not only the confirmation of their title but actual possession.

In the case of a church at Pandacan the women of the parish, in the temporary absence of the priest, took possession of the church, obtaining the keys, and Father Aglipay celebrated mass in the church. I sent for him and for his counsel and advised them of the unlawful character of the action of the women, and directed them to see that possession was restored. They promised to do so, but found the women so obdurate that I called in the women and after a somewhat lengthy discussion told them that I must have the keys. The leader of the women delivered the keys to me, with a statement that they would deliver the keys to the governor, but not to the friale. The new priest who had been appointed was not a friale, but was a Paulist father. They announced to me that they had separated from the Roman Catholic Church and were standing with Aglipay. I turned the keys over to the chief of police and have put the regularly appointed priest in possession of the church, and quiet now reigns there. Yesterday (Sunday) I am informed that Father Aglipay assumed the robes and functions of an archbishop, holding services in the town of Cavite and in the neighborhood.

I have taken occasion to say, whenever an opportunity occurred, that the insular government desired to take no part whatever in the religious controversies thus arising; that it would protect Father Aglipay and his followers in worshiping God as they chose just as it would protect the Roman Catholic Church and its ministers and followers in the same rights. But that, if the law was violated by either party, it would become the duty of the government to step in and restrain such lawlessness.

In the heat and zeal of religious controversies it is not always possible to prevent the followers of the movement at least from stepping beyond the law, and if the movement is to spread throughout the archipelago we may expect disturbances at various points.

The feeling against the friars, which has already been referred to in a number of reports, lends strength to this movement. The existence of the controversy at all, however, adds one more to the burdens of the insular government. There is great difficulty in maintaining a course by the government which shall not only be absolutely impartial between contending religious factions, but which shall seem to both sides to be impartial.

Respectfully,

WM. H. TAFT,
Civil Governor.

The PHILIPPINE COMMISSION, *Manila, P. I.*

REPORT

OF THE

ATTORNEY-GENERAL.

DEPARTMENT OF JUSTICE,
WASHINGTON, D. C., *November 29, 1902.*

To the Senate and House of Representatives of the United States of America in Congress assembled:

I have the honor to submit the following report of business transacted by the Department of Justice for the last preceding fiscal year and of other matters appertaining thereto, as required by law:

SUPREME COURT.

The accompanying table shows the result of last year's work of the Supreme Court of the United States, so far as the number of cases can show it. There was a decrease of 18 in the number of cases docketed on the appellate docket, and an increase of 7 in the number disposed of, the number remaining having been increased thereby from 336 to 344.

	Appellate docket—October term.											
	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.
Cases at close of previous term not disposed of	1,177	1,190	1,073	934	714	640	533	383	313	304	303	336
Cases docketed at the term	623	379	275	280	332	382	284	302	520	370	401	383
Total	1,800	1,569	1,348	1,214	1,046	1,022	817	685	833	674	704	719
Cases disposed of at the term	610	496	414	500	406	499	434	372	529	371	368	375
Cases remaining undisposed of	1,190	1,073	934	714	640	533	383	313	304	303	336	344

The appellate docket at the close of the last term shows an increase of 8 cases since the close of the preceding term. At the close of the October term, 1900, there remained undisposed of on the appellate docket 336 cases, and on the original docket 10 cases, making a total of 346. The number of cases docketed at the October term, 1901, was 386, of which 383 were on the appellate docket and 3 on the original docket. These, with the 346 cases remaining undisposed of, made the total

number of cases pending at the beginning of the last term 732, of which 719 were on the appellate and 13 on the original docket. Of this number 377 were disposed of during the term, of which 375 were on the appellate and 2 on the original docket, leaving undisposed of at the close of the October term, 1901, 355 cases, 344 being on the appellate and 11 on the original docket.

The number of cases actually considered by the court was 375, of which 168 were argued orally and 126 submitted on printed arguments. Of the 375 appellate cases disposed of, 123 were affirmed, 56 reversed, 41 dismissed, 42 settled by the parties and dismissed, in 9 questions certified were answered, and 81 were denials of petitions for writs of certiorari under the act of March 3, 1891.

The total number of cases on the appellate docket in which the United States was a party or had a substantial interest, disposed of at the October term, 1901, was 86. The United States was appellant, etc., in 26 of these cases, and appellee, etc., in 63, 3 being cross-appeals.

Of the 26 cases appealed, etc., by the Government, 10 were decided in its favor and 11 adversely; 2 cases were dismissed by it, 2 were denials of petitions for writs of certiorari, and 1 was dismissed by the court for want of jurisdiction.

Of the 63 cases in which the Government was appellee, 28 were determined in its favor and 4 adversely; 1 was dismissed by the appellant, 21 were docketed and dismissed, 2 were dismissed by the court, 1 was dismissed per stipulation, 1 was reversed per stipulation, and 6 were denials of petitions for writs of certiorari.

Of the above 86 cases, 13 were appeals from the Court of Claims, of which 7 were taken by the Government. Of the 7 cases so appealed, 2 were decided in favor of the Government and 3 adversely, 1 modified, and 1 dismissed by the court; while of the 6 cases in which it was appellee, 5 were decided in its favor and 1 modified.

Of the 86 cases referred to, 5 were criminal, 2 of which were capital. Of these, 2, both capital, were decided in favor of the United States; 2, petitions for certiorari, were denied, and 1 was docketed and dismissed.

Eight cases were appeals, etc., from the Circuit Courts of Appeals, of which 2 were decided in favor of and 3 against the United States, 1 was dismissed by the Government, and in 1 the decree was modified.

Ten cases were from the Court of Private Land Claims, 6 of which were appealed by the United States and 5 by the other side, 1 being a cross-appeal. Of these, 6 were decided in its favor and 2 adversely, 1 dismissed per stipulation, and 1 docketed and dismissed.

The United States was petitioner in 2 petitions for writs of certiorari under the act of March 3, 1891, and respondent in 6, all of which were denied.

Of the whole number of cases in which the Government had a substantial interest heard and decided by the court, 36 were decided in favor of the United States, 2 in part for the United States, and 15 against the United States.

In addition to the above, 1 original case against the United States was decided in its favor.

IMPORTANT CASES DECIDED.

Among the many cases heard and decided by the Supreme Court during the October term, 1901, the following are the more important:

Dooley v. United States. (183 U. S., 151.)

[No. 207. Argued January 8–11, 1901. Decided December 2, 1901.]

This was one of the insular cases, known as the second Dooley case, and was brought to recover back duties collected under the Foraker Act on goods brought into Porto Rico from the United States. In addition to the objection urged against the duties levied under the Foraker Act on goods brought into the United States from Porto Rico and overruled in the Downes case, the validity of these duties was assailed on the ground that they violated the provision of the Constitution forbidding Congress to impose any duty upon articles exported from any State. The court held that, within the meaning of the Constitution, only those articles destined for a foreign country constitute "articles exported from any State," that Porto Rico was not "a foreign country," but, under the decision in the De Lima case, was territory appurtenant to the United States, and that therefore goods shipped from the United States into Porto Rico were not articles exported from a State within the meaning of the provision referred to. Mr. Justice Brown delivered the opinion, in which Justices Gray, Shiras, White, and McKenna concurred, while the Chief Justice and Justices Harlan, Brewer, and Peckham dissented. The syllabus is as follows:

> The act of Congress taking effect May 1, 1900, and known as the Foraker Act, which requires all merchandise going into Porto Rico from the United States to pay a duty of 15 per cent of the amount of duties paid upon merchandise imported from foreign countries, is constitutional.
>
> The Constitution, in declaring that no tax or duty shall be laid on articles exported from any State, is limited to articles exported to a foreign country, and has no application to Porto Rico, which, in the case of *De Lima* v. *Bidwell*, 182 U. S., 1, was held not to be a foreign country within the meaning of the general tariff law then in force.
>
> The fact that the duties so collected were not covered into the general fund of the Treasury, but held as a separate fund to be used for the government and benefit of Porto Rico, and were made subject to repeal by the legislative assembly of that island,

shows that the tax was not intended as a duty upon exports and that Congress was undertaking to legislate for the island temporarily, and only until a local government was put in operation.

Fourteen Diamond Rings, Emil J. Pepke, Claimant, v. United States. (183 U. S., 176.)

[No. 153. Argued December 17–20, 1900. Decided December 2, 1901.]

This case, commonly known as the Fourteen Diamond Rings case, was also one of the insular tariff cases, and involved the validity of the collection of duties, under the Dingley law, on goods imported into the United States from the Philippines after their cession by the treaty of Paris. Following the decision in the De Lima case, the court held that, by the act of cession, the Philippines ceased to be "foreign country" within the meaning of the Dingley law, and became territory appurtenant to the United States: and that, pending action by Congress, duties could not be collected under the Dingley law on goods imported into the United States from the Philippines. Chief Justice Fuller delivered the opinion, in which Justices Harlan, Brown, Brewer, and Peckham concurred.

It was pointed out in the opinion that neither the McEnery resolution nor the insurrection in the Philippines availed to distinguish the status of the Philippines under the cession from that of Porto Rico. The resolution passed by a mere majority of the Senate after the ratification of the treaty, and not passed also by the House and approved by the President, had validity neither as an act of the treaty-making or the legislative power. The insurrection could not serve to affect the title and sovereignty of the United States over the islands. Spain had held sovereignty over them for centuries, and had legally transferred her title to the United States. The action of the President in suppressing the insurrection could be viewed only as an exercise of lawful authority over territory under the rightful sovereignty of the United States, and not as the prosecution of a war of conquest for the subjugation of people not lawfully under our sovereignty. Mr. Justice Gray delivered a dissenting opinion, in which Justices White, Shiras, and McKenna concurred. The syllabus follows:

1. The ruling in *De Lima* v. *Bidwell* (182 U. S., 1), reaffirmed and applied.

2. No distinction, so far as the question determined in that case is concerned, can be made between the Philippines and the island of Porto Rico, after the ratification of the treaty of peace between the United States and Spain, April 11, 1899, and certainly not

(*a*) Because of the passage by the Senate alone, by a majority, but not two-thirds of a *quorum*, of a joint resolution in respect to the intention of the Senate in the ratification;

(*b*) Or because of the armed resistance of the native inhabitants,

or of uncivilized tribes, in the Philippines, to the dominion of the United States;

(c) Or, because one of the justices who concurred in the judgment in *De Lima* v. *Bidwell*, also concurred in the judgment in *Downes* v. *Bidwell* (182 U. S., 244).

Greene v. Henkel. (183 U. S., 249.)

[Argued November 26, 27, 1901. Decided January 6, 1902.]

This case grew out of the proceedings instituted by the Government to secure the removal of Greene and the Gaynors from New York to Georgia for trial upon the charge of conspiring, along with Capt. Oberlin M. Carter, to defraud the Government, and of defrauding the Government, of large amounts. After tedious proceedings, an order of removal was issued in New York. To test the validity of the order, habeas corpus proceedings were brought, and the case was ultimately carried to the Supreme Court, which in effect affirmed the order of removal. The points decided appear in the syllabus.

A fair interpretation of the language used by the district judge in the court below in granting the application for a warrant of removal from New York to Georgia shows that from the evidence he was of opinion that there existed probable cause, and that the defendants should therefore be removed for trial before the court in which the indictment was found.

In proceedings touching the removal of a person indicted in another State from that in which he is found to that in which the indictment is found, this court must assume, in the absence of the evidence before the court below, that its finding of probable cause was sustained by competent evidence.

It is not a condition precedent to taking action under Revised Statutes, section 1014, that an indictment for the offense should have been found.

The finding of an indictment does not preclude the Government, under Revised Statutes, section 1014, from giving evidence of a certain and definite character concerning the commission of the offense by the defendants in regard to acts, times, and circumstances which are stated in the indictment itself with less minuteness and detail.

Upon this writ the point to be decided is whether the judge who made the order for the removal of the defendants had jurisdiction to make it; and if he had, the question whether upon the merits he ought to have made it, is not one which can be reviewed by means of a writ of habeas corpus.

The indictment in this case is prima facie good, and when a copy of it is certified by the proper officer, a magistrate acting pursuant to Revised Statutes, section 1014, is justified in treating the instrument as an indictment found by a competent jury, and is not authorized to go into evidence which may show or tend to show violations of the United States statutes in the drawing of the jurors composing the grand jury which found the indictment.

By a removal such as was made in this case the constitutional rights of the defendents were in no way taken from them.

Stanton Carter v. McClaughry. (183 U. S., 365.)

[No. 251. Argued December 3, 4, 1901. Decided January 6, 1902.]

This was a habeas corpus proceeding, instituted to bring again before the court the case of Oberlin M. Carter, formerly a captain in the Engineer Corps of the Army, and now serving a term of imprisonment in the Leavenworth Penitentiary under the sentence of a court-martial. Carter was tried and convicted on several charges and specifications, and was sentenced to be dismissed from the Army and pay a fine of $5,000, and to be imprisoned in the penitentiary for five years. The principal point made was that, having paid the fine and been dismissed from the Army, he could not be imprisoned in the penitentiary without punishing him twice for the same offense. The court held, however, that he had been convicted under separate charges of distinct offenses, for which the court-martial was empowered to punish him, as to one by fine and as to the other by imprisonment. A number of other points were decided, as appears in the syllabus.

The rule reiterated, that civil tribunals will not revise the proceedings of courts-martial, except for the purpose of ascertaining whether they had jurisdiction of the person and of the subject-matter, and whether, though having such jurisdiction, they have exceeded their powers in the sentences pronounced.

Where the punishment on conviction of any military offense is left to the discretion of the court-martial the limit of the punishment, in time of peace, prescribed by the President, applies to the punishment of enlisted men only.

Where the jurisdiction of the military court has attached in respect of an officer of the Army, this includes not only the power to hear and determine the case, but the power to execute and enforce the sentence.

Where the sentence is rendered on findings of guilty of several charges with specifications thereunder, and the President, as the reviewing authority, has disapproved of the findings of guilty of some of the specifications, but approved the findings of guilty of some of the specifications under each of the charges, and of the charges, and the President does not think proper to remand the case to the court-martial for revision, or to mitigate the sentence, or to pardon the accused, but approves the sentence, the judgment so rendered can not be disturbed on the ground that the disapproval of some of the specifications vitiated the sentence.

In this case, Charge I was "Conspiring to defraud the United States, in violation of the sixtieth article of war." Charge II, was "Causing false and fraudulent claims to be made against the United States, in violation of the sixtieth article of war." These are separate and distinct offenses, and the military court was empowered to punish the accused as to one by fine and as to the other by imprisonment.

Charge III was "Conduct unbecoming an officer and a gentleman, in violation of the sixty-first article of war." This is not the same offense as the offenses charged under the sixtieth article of

war. But in view of articles 97 and 100, conviction of Charges I and II involves conviction under article 61, and the officer may be dismissed on conviction under either article.

Charge IV was "Embezzlement, as defined in section 5488 of the Revised Statutes, in violation of the sixty-second article of war." *Held:* (a) That the specified crime was not mentioned in the preceding articles. That the offenses of which the accused was convicted under the sixtieth article were distinct from the acts prohibited by section 5488. (b) That the crime alleged in this charge was not covered by subdivision 9 of article 60, because the embezzlement charged was not of money "furnished or intended for military service." (c) Nor was the money applied to a purpose prescribed by law, and it was for the court-martial to determine whether the crime charged was "to the prejudice of good order and military discipline."

Southern Pacific Railroad Company v. United States.

United States v. Southern Pacific Railroad Company.
(183 U. S., 519.)

[Nos. 18 and 24. Argued January 29, 30, 1901. Decided January 6, 1902.]

These cases involved the title to a large body of lands in the State of California which were within the place limits of both the Atlantic and Pacific Railroad Company and the Southern Pacific Railroad Company, under the act of July 27, 1866 (14 Stat., 292), incorporating the former company and also authorizing the latter to connect therewith. There had been previous litigation between the United States and the Southern Pacific Company in reference to lands along the line of the Atlantic and Pacific Railroad. The court held that the prior decisions, which were adverse to the Southern Pacific, did not determine the right of that company to the lands here in controversy, which was derived under a different act; that both the grant to the Southern Pacific and the Atlantic and Pacific in the act of 1866 took effect, and being by the same act, so far as there was a conflict, the two companies took equal undivided moieties of the land; and that the interest of the Atlantic and Pacific therein had been vested in the United States by the forfeiture act of July 6, 1886 (24 Stat., 123).

United States v. Southern Pacific Railroad Company. (184 U. S., 49.)

[No. 25. Argued April 18, 19, 1901. Decided January 27, 1902.]

The facts in this case and the conclusions of the court are sufficiently stated in the syllabus.

This case is a continuation of *Southern Pacific Railroad Company* v. *United States*, 168 U. S., 1, brought to quiet the title of the Government to lands within the limits of the forfeited grant to the Atlantic and Pacific Railroad Company. The questions in this case arise between the United States and parties holding title

or claiming rights to lands by deed from or contract with the railroad company. The title of the company having been adjudged void, the acts of March 3, 1887, 24 Stat., 556; of February 12, 1896, 29 Stat., 6; of March 2, 1896, 29 Stat., 42, were passed for the purpose of upholding the titles of parties who, in good faith, had purchased lands from railroad companies which, though supposed to be part of their grants, proved not to be so. The first section of the act of March 2, 1896, reads: "But no patent to any lands held by a bona fide purchaser shall be vacated or annulled, but the right and title of such purchaser is hereby confirmed."

Held: 1. That the facts bring this case within the provisions of that section; and that the circuit court rightly confirmed the title to lands patented under it. 2. That the unpatented lands were so situated with reference to the constructed road of the Southern Pacific as to be within the scope of its grant, and that the act was not intended to be limited to cases of purchases from the railroad company prior to its date. 3. That while the act was remedial, and to be liberally construed, yet to sustain the purchase in controversy in this case as one made in good faith, would ignore the plainest provisions of law in respect to bona fide purchasers, and would uphold almost any kind of speculative purchase.

United States v. Rio Grande Dam and Irrigation Company. (184 U. S., 416.)

[No. 239. Argued November 14, 15, 1901. Decided March 3, 1902.]

This was a suit by the United States to prevent the defendant corporation from constructing over and near the Rio Grande, in the Territory of New Mexico, a dam and reservoir for the purpose of appropriating the waters of that river in their private business. The case was before the court at a former term (174 U. S., 690), when the decree of the supreme court of the Territory appealed from was reversed and the case remanded for further proceedings. At the hearing in the trial court which followed the Government applied for a continuance in order to obtain further evidence, which was granted only in part, and subsequently for a rehearing, on the ground of newly discovered evidence, which was refused, and the bill dismissed. The judgment of the court upon the questions presented on this appeal appears from the syllabus, as follows:

The motion made in the court below on behalf of the United States for a continuance of this cause and the application for a rehearing were addressed to the discretion of the trial court, and this court can not reverse the decree below merely upon the ground that the trial court erred in its denial of those motions; but as it is quite clear that the record does not contain evidence of a material character, and that the absence of such evidence is due to the action of the trial court in not giving sufficient time to the Government to prepare its case, this court can not resist the conviction that if it proceeds to a final decree upon the present

record great wrong may be done, and it reverses the decree below, without considering the merits, and remands the case with orders that leave should be granted to both sides to adduce further evidence.

Eidman v. Martinez. (184 U. S., 578.)

[No. 287. Argued November 21, 1901. Decided March 17, 1902.]

This case presented the question of the applicability of the inheritance tax provisions of the war-revenue act of 1898 to the intangible personal property of a nonresident alien, such property being at the time of his death within the United States. The conclusions of the court are stated in the syllabus.

Congress is bound to express its intention to tax in clear and unambiguous language, and a liberal construction should be given to words of exception confining the operation of the duty.

The war tax law of 1898 imposing a tax upon legacies or distributive shares arising from personal property passing "from any person possessed of such property, either by will or by the intestate laws of any State or Territory," does not apply to the intangible personal property in this country of an alien domiciled abroad, whose property passed to his son, also an alien domiciled abroad, partly by will and partly by the intestate laws of such foreign country.

The act does not make the duty payable when the person possessed of such property dies testate, if it would not be payable if such person had died intestate; and the words "passing by will" are limited to wills executed in a State or Territory under whose laws the property would pass if the owner had died intestate.

Moore v. Ruckgaber (184 U. S., 593).

[No. 295. Argued November 2, 1901. Decided March 17, 1902.]

As appears from the syllabus, the questions presented in this case were similar to those in *Eidman* v. *Martinez*, supra.

The war-tax law of 1898 does not apply to intangible personal property located in this country and passing by the will of an alien domiciled abroad to a daughter who is also an alien domiciled abroad, although the will was executed in this country during a temporary sojourn here.

As the tax is not imposed upon the property but upon the succession to the property, the law of the country in which the succession takes place determines the liability to taxation.

The law does not apply to property passing under a will if it would not apply in case the testator had died intestate, and as in this case the property would have passed under the intestate laws of France the succession is not subject to a tax here, although the will was executed in this country.

Patton v. Brady, executrix. (184 U. S., 608.)

[No. 1. Argued December 6, 1901. Decided March 17, 1902.]

This case involved the constitutionality of section 3 of the war-revenue act of 1898, imposing additional duties upon manufactured tobacco. After the case reached the Supreme Court the original defendant, the internal-revenue collector who levied the tax sought to be recovered, died, and his executrix was substituted for him. The conclusions of the court upon the questions raised appear from the syllabus.

> A case arises under the Constitution of the United States when the right of either party depends on the validity of an act of Congress, which is the fact in this case.
>
> In this case the cause of action survived the death of the defendant, and was rightfully revived in the name of his executrix.
>
> The tax on manufactured tobacco is a tax on an article manufactured for consumption, and imposed at a period intermediate the commencement of manufacture and the final consumption of the article.
>
> The tax which is levied thereby is an excise.
>
> Taxation may run *pari passu* with expenditure, and the courts can not revise the action of Congress in this respect.
>
> A general tax may be charged upon property once charged with an excise; and the power to tax it as property, subject to constitutional limitations as to the mode of taxing property, is not defeated by the fact that it has already paid an excise.
>
> The legislative determination as to the reasonableness of an excise in amount or as to the property to which it is applied is final.
>
> It is within the power of Congress to increase an excise at least while the property is held for sale, and before it has passed into the hands of the consumer.

Iron Gate Bank v. Brady. (184 U. S., 665.)

[No. 175. Argued February 28, March 3, 1902. Decided March 24, 1902.]

This was a suit to recover damages for the forcible collection of the 10 per cent tax on State bank issue. After the case reached this court the defendant, a collector of internal revenue, died, and an application was made to revive in the name of his personal representative. The syllabus states the judgment of the court:

> A tort by which the estate of the defendant was not increased, and the estate of the plaintiff damaged only as an indirect consequence of the alleged wrongful act of the defendant, does not, either at common law or by the statutes of Virginia, survive the death of the wrongdoer.
>
> The plaintiff elected to go into court on an action sounding in tort, and it must abide by its election.

Rodgers v. United States. (185 U. S., 83.)

[No. 317. Argued February 26, 1902. Decided April 7, 1902.]

This case, which was an appeal from the Court of Claims, involved the construction of the act of Congress of March 3, 1899, known as the "Navy Personnel Act," in the light of previous legislation on the subject. The court held:

> Where there are two statutes, the earlier special and the later general (the terms of the general being broad enough to include the matter provided for in the special), the fact that the one is special and the other is general creates a presumption that the special is to be considered as remaining an exception to the general, and the general will not be understood as repealing the special, unless a repeal is expressly named, or unless the provisions of the general are manifestly inconsistent with those of the special.
>
> Section 7 of the act of March 3, 1899 (c. 413, 30 Stats., 1004), in effect abolishes the rank of commodore, at least as far as respects the active list of the line of the Navy, and lifts those in that rank to that of rear-admiral. Clearly that was a special provision in respect to which the attention of Congress was at the time directed, and when in section 13 Congress prescribed a general rule for the salaries of naval officers, such general rule can not be understood as repealing that special provision.
>
> That section fixed the amount of the salary, but did not affect any general provisions of law affecting a difference between salary while at sea and while on shore.

United States v. Lee Yen Tai. (185 U. S., 213.)

[No. 503. Argued March 13, 14, 1902. Decided April 21, 1902.]

This case presented the question whether the twelfth section of the Chinese exclusion act of May 6, 1882 (22 Stats., 58, 61), as amended and continued in force, and which provided the method by which any Chinese person unlawfully within the United States might be removed therefrom, was abrogated by the treaty with China of December 8, 1894 (28 Stats., 1210), which related to the same subject, but provided no means for the deportation of the persons thereby agreed to be excluded from the United States. The court affirmed the power of the Government to supersede a prior act of Congress by a treaty, but said that the purpose to do so must clearly and distinctly appear; and it was held that in this case, so far from there being any inconsistency between the statute and treaty referred to, the section in question, as amended, was in perfect harmony with the treaty, and could be enforced without impairing any right secured thereby. The syllabus is as follows:

> In case statutes are alleged to be inconsistent with each other, effect must be given to both, if by any reasonable interpretation

that can be done; and like principles must control when the question is whether an act of Congress has been superseded in whole or in part by a subsequent treaty with a foreign nation.

Fok Yung Yo v. United States (185 U. S., 296).

[No. 478. Argued January 7, 1902. Decided May 5, 1902.]

This case related to the privilege of transit of Chinese persons across the territory of the United States, and raised an inquiry as to the power of the judiciary to interfere with the action of the executive authorities of the Government in such matters. The conclusions of the court on the questions presented appear in the syllabus.

The power to exclude or expel aliens is vested in the political departments of the Government, to be regulated by treaty or by act of Congress, and to be executed by the executive authority according to such regulations, except so far as the judicial department is authorized by treaty or by statute, or is required by the Constitution, to intervene. And this is true of the privilege of transit.

By the treaty between the United States and China, of 1894, the privilege of transit across the territory of the United States could only be enjoyed subject to such regulations of the Government of the United States as might be necessary to prevent the privilege from being abused.

The treaty, in recognizing the privilege and providing that it should continue, proceeded on the ground of its existence and continuance under governmental regulations, and no act of Congress was required to carry it into effect.

Under existing regulations the action of the collector of customs in refusing transit can not be interfered with by the courts.

Lee Gon Yung v. United States (185 U. S., 306).

[Argued January 7, 1902. Decided May 5, 1902.]

Fok Yung Yo v. *United States*, ante 296, followed.

The authority of the Government in prescribing regulations in respect of transit being unqualified, and the existing regulations not open to constitutional objection, the court below could not interfere by habeas corpus with the collector's orders, and its ruling on an offer of evidence, the entire record considered, was not erroneous.

Minnesota v. Hitchcock. (185 U. S., 373.)

[No. 4. Original. Argued November 1, 4, 1901. Decided May 5, 1902.]

This was an original suit in the Supreme Court commenced by the State of Minnesota to enjoin the Secretary of the Interior and the Commissioner of the General Land Office from selling certain lands in what was known as the Red Lake Indian Reservation. The conclusions of the court appear in the syllabus.

The original jurisdiction, vested by the Constitution in this court over controversies in which a State is a party, is not affected by the question whether the State is a party plaintiff or party defendant.

A dispute as to the title to real estate is a question of a justiciable nature, and can properly be determined in a judicial proceeding.

The United States are to be taken, for the purposes of this case, as the real party in interest adverse to the State.

This court has jurisdiction of this controversy, and is called upon to determine the case on its merits.

Not only the technical rules of statutory construction, but also the general scope of the legislation in these matters, and the policy of the United States in respect to public schools, and also to Indians, concur in sustaining the contention of the Government that none of these ceded lands passed under the school grant to the State.

The court is of opinion that the claim of Minnesota to these lands can not be sustained, and that the bill should be dismissed.

Lee Lung v. Patterson. (186 U. S., 168.)

[No. 189. Argued April 21, 1902. Decided May 19, 1902.]

Under the statutes referred to in the opinion of the court, jurisdiction is given to the collector of the port at which an alien Chinese seeks to land, over his right to do so, and necessarily also to pass upon the evidence presented to establish that right.

Chin Bak Kan v. United States.

Chin Ying v. United States. (186 U. S., 193.)

[Nos. 525, 526. Argued March 13, 14, 1902. Decided June 2, 1902.]

The court followed the ruling in *United States* v. *Lee Yan Tai*, supra, as to the repeal effect of the treaty of 1894 with China upon the provisions of law authorizing proceedings for the removal of Chinese unlawfully within the United States. It was contended, however, that the United States commissioner before whom these proceedings were had was without jurisdiction, because a claim of citizenship had been made in behalf of the Chinese sought to be removed thereby. But the court held that it was competent for Congress, as it had done, to empower such commissioners to determine the various facts on which citizenship depends, under the decision in the Wong Kim Ark case (169 U. S., 649). A reexamination of the facts was also refused, as they had been twice determined, by the commissioner and the district court, the court observing that the same reasoning in regard to the authority to exclude applied to the authority to expel, and that the policy of legislation in respect to exclusion and expulsion was opposed to numerous appeals.

Pine River Logging Company v. United States. (186 U. S., 279.)

[No. 250. Argued May 1, 2, 1902. Decided June 2, 1902.]

This was an action in the nature of trover, commenced in the Circuit Court for the District of Minnesota by the United States against the Pine River Logging and Improvement Company and others, to recover damages for the wrongful entry by the defendants upon an Indian reservation, and the cutting and removing of certain pine timber therefrom. The case was tried three times, the third trial resulting in a verdict, by direction of the court, in favor of the United States for $88,269.94. This judgment was affirmed both by the circuit court of appeals and by the Supreme Court. The syllabus is as follows:

By an act of Congress of February 16, 1889, the President was authorized to allow Indians residing on reservations to cut and dispose of dead timber, standing or fallen, on such reservations, for the sole benefit of such Indians. Defendants made five different contracts with individual Indians for the cutting of an aggregate of 2,750,000 feet. As a matter of fact, they cut and removed 17,000,000 feet. *Held:* That as to such excess both the Indians and the defendants were trespassers.

The objection that the several defendants were not responsible for the acts of each other is one which should be taken at the trial, and if not so taken can not be made available upon writ of error from this court.

In designating the number of feet to be cut under certain contracts, the use of the words "about" or "more or less" will not justify the cutting of a quantity and designedly greater than the amount provided for in the contract.

The fact that the parties themselves disregarded the amount stipulated in the contract, and the further fact that the agent of the Indian Department, who personally directed what timber should be cut and supervised such cutting, assented to their construction of the contract, is no excuse for a material departure from the terms of contract, which had been approved by the Commissioner of Indian Affairs, acting under the authority and regulations of the President.

With the contracts before them, the agents of the Government had but one duty, and that was to see that they were honestly and faithfully carried out according to their spirit and letter.

Damages were properly assessed at the value of the logs as they were banked upon the streams and lakes near where they were cut.

Defendants, being either willful trespassers or purchasers from such trespassers, were held not to be entitled to credit for the labor expended upon the timber, but were liable for its full value when seized, although if the trespass had been the result of inadvertence or mistake, and the wrong was not intentional, the stumpage value of the timber when first cut would be the proper measure of damages.

The defendants were held not to be entitled to credit for a percentage of the stipulated compensation paid to the Indian Department as trustee for the benefit of helpless Indians.

In civil cases the United States recover the same costs as if they were a private individual.

The reporter's fee for a transcript of the record used by the plaintiff in preparing its bill of exceptions on appeal should not be taxed as costs.

United States v. Nichols. (186 U. S., 298.)

[No. 249. Submitted May 2, 1902. Decided June 2, 1902.]

This case was on certificate from the Circuit Court of Appeals for the Second Circuit, and involved the dutiable classification of certain glass bottles, either under the customs administrative act of 1890 or the tariff act of 1894, the bottles in question being filled with merchandise subject to ad valorem duties. Although the court confined its decison to the question certified, and held, as shown by the syllabus, that the bottles were not to be considered "coverings," within the meaning of section 19 of the customs administrative act, and their value added to the dutiable value of their contents, still it plainly intimates in its opinion, when commenting on the dutiable character of the bottles under the provisions of the tariff law, that they are not to be admitted free, but are dutiable under some provision of the act of 1894. The syllabus follows:

Section 19 of the customs administrative act of 1890, requiring that whenever imported merchandise is subject to an ad valorem duty the duty shall be assessed upon the value of all cartons, cases, crates, boxes, sacks, and coverings of any kind, has no application to glass bottles filled with ad valorem goods. Such bottles are not "coverings" in the ordinary sense of the word, and are specially provided for in the tariff acts.

Interstate Commerce Commission v. Chicago, Burlington and Quincy Railroad Company. (186 U. S., 320.)

[No. 154. Argued November 7, 8, 1901. Decided June 2, 1902.]

The case is stated in the syllabus.

This record requires the court to determine whether the court below rightly refused to enforce an order of the Interstate Commerce Commission, by which it was found that an alleged terminal charge, made by the defendants in error, for the delivery of live stock to the stock yards in Chicago, was unjust and unreasonable, and hence a violation of the act to regulate commerce.

As the right of the defendant carriers to divide their rates was conceded by the Commission, and upheld, no contention on this subject arises.

The through rate existing prior to June 1, 1894, is presumed to have provided compensation for services in making delivery at the stock yards.

The proposed conclusion that the rates were unjust and unreasonable can not be sustained.

The decree of the circuit court of appeals was right, and must be affirmed; but nothing therein is to be construed as preventing

that body from commencing proceedings to correct unreasonableness in the rates as to territory to which the reduction did not apply.

BUSINESS IN OTHER COURTS.

The reports of Assistant Attorney-General Pradt, Assistant Attorney-General Thompson, Assistant Attorney-General Fuller, and United States Attorney Reynolds show what has been the volume of business in general cases before the Court of Claims, in the Indian depredation cases, in claims before the Spanish Treaty Claims Commission, and before the Court of Private Land Claims, respectively, and the prompt and efficient manner in which that business has been conducted on the part of the Government.

I refer to these reports for detailed information.

NEW DEPARTMENT BUILDING.

At the last session of Congress a bill was introduced in the Senate on January 7, 1902 (S. 2462), "to provide for the purchase of a site and the erection thereon of a public building to be used for a Department of State and a Department of Justice," which was reported back from the Committee on Public Buildings and Grounds, with an amendment, April 12, 1902, but no further action was taken upon it. By "An act to increase the limit of cost of certain public buildings," etc., approved June 6, 1902, section 23, the act approved March 3, 1899, to provide for the erection of a building for the Department of Justice was repealed and the Attorney-General directed to cover into the Treasury of the United States the balance of the appropriation carried in that act and unexpended.

The Department is still occupying rented quarters, with its official force distributed in five buildings. It has been occupying rented quarters since 1899, when its building on Pennsylvania avenue was condemned and torn down.

UNITED STATES PRISONERS.

Exhibit J, with this report, shows where United States prisoners have been confined during the year, the districts in which they have been convicted, the number from each district, and the total number in each institution.

On July 1, 1901, there were 2,998 United States convicts in the various prisons and reformatories of the country. At the close of the last fiscal year, June 30, 1902, there were 3,150.

Of the total number in confinement June 30, 1902, 904 were in the United States penitentiary at Fort Leavenworth, Kans., 347 in the United States penitentiary at Atlanta, Ga., and 100 in the prison at McNeil Island, Washington. The remainder, 1,799, were in the various State institutions used for the purpose.

STATISTICS.

Number of prisoners received during the year in penitentiary.

Total number in custody	4,860
Discharged during the year	1,710
In confinement on June 30, 1902	3,150
Discharged by expiration of sentence	1,362
Died	58
Pardoned or commuted	119
Transferred or escaped	139
Released by writ of habeas corpus	19
Transferred to insane asylum	13
Received during the year ended June 30, 1902	1,862
Of those in prison on June 30, 1902, there were 610 employed on piece-price, 404 on State account, 1,970 on prison duties.	
Convicted of violations of revenue laws	122
Counterfeiting	196
Violation of postal laws	246
Introducing liquor into Indian country or selling liquor to Indians	170
Violation of laws relating to pensions	24
Larceny	264
Murder and manslaughter	98
Embezzlement	30
Perjury	22
Forgery	26
Robbery and burglary	79
Offenses other than those named	585
Born in United States	1,618
Foreign born	244
Males	1,837
Females	25
Whites	1,270
Colored	423
Indians and Chinese	169
Could read and write	1,415
Could read only	47
Could neither read nor write	400
Married	707
Single	1,155
In prison for first time	1,699
Heretofore served sentence	163
Received under 20 years of age	281
Between 20 and 30	784
Between 30 and 40	418
Between 40 and 50	214
Over 50 years of age	165
Idle	77
Disabled or sick	89

THE UNITED STATES PENITENTIARY AT ATLANTA, GA.

The appropriations for the erection of this institution, included in three separate acts, amounted to $615,000, and the acts provided that, for this sum, there should be erected a penitentiary complete. The

plans as prepared by the architects and approved by the Department, contemplated a main front consisting of a large cell house, with appropriate administration buildings in the center, a rear cell building parallel to the main structure and the requisite accommodations for steam and electric plants, dining room, kitchen, chapel, hospital, refrigerating plant, etc. It having been ascertained that the cost of the entire structures as planned would be largely in excess of the amount appropriated it was determined to erect a prison complete, as prescribed in the act, omitting the main building as designed in the plans, and making a front, for the time being, of the smaller cell house, using the structure built to ultimately connect the two cell houses as the administration building. A complete prison is the result, capable of accommodating about 700 inmates, by whose labor, in due time, the inclosing walls and the main cell house or front will, it is expected, be built.

Preparations are now going forward for the erection of barns, stone-cutting shed, and warden's residence, and ample occupation will be furnished the prisoners in cutting stone for the further construction of prison buildings, cultivating the farm, etc. It is believed that out-of-door labor of this kind, in the mild climate of Georgia, will be quite as beneficial to the inmates as employment in shops, and also advantageous to the Government in that, as the result of such labor, a well built and commodious penitentiary will be finally erected at a minimum of cost.

The number of prisoners in confinement on June 30, 1902, was 347. The average daily cost of subsistence was about 12½ cents, which, considering the small number of inmates, is exceedingly reasonable.

The report of the warden accompanies this report as Exhibit W.

UNITED STATES PENITENTIARY, FORT LEAVENWORTH, KANS.

But few changes have taken place in this institution since the report of last year. The total expense of maintenance for the year ended June 30, 1902, was $166,346.61, the daily average cost per capita being about 51 cents, and for subsistence alone about 12 cents.

The inmates have been employed during the past year in the performance of the usual prison duties, cultivation of the prison farm, and in the erection of buildings and wall at the new penitentiary site. The farm has produced well, and the results, as shown in the warden's report, have been most encouraging.

The report of the warden appears as Exhibit K.

NEW PENITENTIARY, FORT LEAVENWORTH, KANS.

The work of construction of the new penitentiary has been carried on during the past year, in the face of many difficulties, with a very encouraging measure of success, and the detailed report of the super-

intendent of construction, which accompanies the warden's report, shows the satisfactory results accomplished by the prisoners' labor.

PENITENTIARY AT McNEIL ISLAND, WASHINGTON.

Since 1890 this prison has been conducted, under the direction of the marshal for the district of Washington, as a place of confinement for United States prisoners from Washington and neighboring districts.

Agents of the Department who have visited the institution within the past year report the place as practically unfit for the purposes of a penitentiary, and that it is not easily accessible, being on an island some three miles from the mainland. It will be necessary soon to transfer a number of prisoners to some other institution, because of the overcrowded condition, and it may be wise and for the best interests of the Government to discontinue its use entirely in the near future. The building is small, with more of the characteristics of a jail than an ordinary prison, while the inmates are practically unemployed.

In the act approved March 3, 1891, the erection of three United States prisons—one to be situated at some convenient point on the Pacific slope—was contemplated. Two of those prisons are now in the course of erection, one partially completed at Atlanta, Ga., and one at Fort Leavenworth, Kans. While possibly the erection of the third prison in the extreme West is not absolutely requisite at the present time, it is quite probable that a prison for the reception of United States prisoners from the extreme western districts and Alaska will be necessary in the near future. The attention of Congress has been invited to this subject in former reports, and the matter is again presented, in order that the necessities of the case and the advisability of providing for the erection of the third prison in the West may be considered.

At the year's close, June 30, 1902, 100 prisoners were in confinement, and 194 were received during the year. Of these, 62 were from Washington, 35 from Alaska, 5 from Idaho, and 2 from Oregon.

UNITED STATES JAIL, DISTRICT OF COLUMBIA.

The report of the warden (Exhibit N) accompanies this report. The institution has been conducted during the past year as economically as practicable, and with an earnest regard on the part of the officials for the interests of the Government.

The average daily number of prisoners during the year was 383. The average cost of maintenance was $36\frac{5}{12}$ cents per capita per diem, with $9\frac{2}{13}$ cents as the average cost per capita per day for subsistence only.

SOLICITOR OF THE TREASURY.

The report of the Solicitor of the Treasury (Exhibit H) shows the amount, character, and results of litigation conducted under his direction for the fiscal year ending June 30, 1902. The whole number of suits decided or otherwise disposed of during the year was 4,848, and the amount of judgments obtained $497,892.03. The Solicitor renews his recommendation that section 773, Revised Statutes, be amended so as to require United States attorneys to forward the annual report sent to his office on the 1st day of September in each year, instead of October. He also recommends that the status of the force in his office be changed by providing for two docket clerks at $2,000 each and reducing the number of $1,800 and $1,600 clerks one each. I approve both these recommendations.

COMMISSION TO REVISE AND CODIFY THE CRIMINAL AND PENAL LAWS.

The commissioners to revise the laws of the United States report the progress that they have made in the revision and codification of all laws of a general and permanent nature, with a statement of some of the difficulties that they encounter in the performance of their duties. They submit drafts of proposed amendments to the pending bills embracing the judicial and penal codes previously reported, in which are embodied the changes in the criminal laws and the laws relating to the courts of the United States that were made during the first session of the present Congress. They also submit a proposed amendment to the existing provision governing the venue of actions against nonresident corporations, with a recital of the considerations in behalf of the suggested change.

JUDICIAL SALARIES.

I wish to repeat what was said in the last annual report as to the propriety of increasing the salaries paid by the United States to its judicial officers, a matter which has been mentioned heretofore by the Attorney-General and has occupied the attention of Congress, and to direct particular attention to that part of the report of the Commission to Revise and Codify the Criminal and Penal Laws, made to Congress at its last session, which deals with this subject. That report states the reasons for increasing, as follows:

> The present salaries are less than those paid for like services in the more populous States; they are intrinsically inadequate in contemplation of the professional standing and attainments of the incumbents, and they operate to the detriment of the public in that in some instances they exclude lawyers of the highest degree of fitness from the judicial service of the United States. It is a fact of frequent occurrence that a practitioner receives a single fee exceeding the annual salary of the judge before whom he appears in the cause. The justices of the court of last resort in New York receive $17,500 per year and the judges of general sessions

$12,000. Compared with England, the contrast is even more striking and significant. The lord chief justice has a salary of $40,000, and each of the judges at nisi prius a salary of $25,000. These considerations have exercised a growing influence upon public sentiment, and the views of the legal profession in behalf of the more adequate compensation of Federal judges have been voiced by the American Bar Association and like organizations in several of the States and larger cities of the Union.

To this I may add that the present salaries of the Chief Justice and Associate Justices of the Supreme Court were fixed by the act of March 3, 1873, since which date the earning capacity of the legal profession has increased greatly, as has that of other professions and businesses.

I concur with the commission in saying that the salaries of the United States judges should be increased, but I make no recommendation as to the amount of the increase. At the first session of the Fifty-sixth Congress a bill was introduced in the Senate (S. 3450) "to fix the salaries of certain judges of the United States," which was reported to the Senate March 26, 1900, with amendments, and an accompanying table showing the salaries paid United States judges, to State judges in certain of the States, to judges of the English courts, and to certain executive officers under the United States Government. I consider it essential to the preservation of the high standard of the judiciary of the United States that this question of the salaries of the judges should receive particular and careful attention on the part of Congress.

SPANISH TREATY CLAIMS.

Since the report of Assistant Attorney-General Fuller, in charge of the defense of claims before the Spanish Treaty Claims Commission, was written, the Commission has sustained the demurrer in the remaining *Maine* cases, 150 in number, and they have been dismissed.

REPORT OF THE ATTORNEY-GENERAL OF PORTO RICO.

Under the provisions of section 21 of the act approved April 12, 1900, "An act temporarily to provide revenues and a civil government for Porto Rico, and for other purposes," I have transmitted to Congress the report of the attorney-general of Porto Rico, and have also included it in this report as Exhibit V.

INSULAR AND TERRITORIAL AFFAIRS.

In my last report the attention of Congress was called to an estimate for an appropriation of $25,000 per annum to provide for the constantly increasing business of this Department growing out of our insular and territorial possessions. An appropriation was promptly made, and on the first of March last a bureau of insular and territorial affairs was organized for the purposes fully explained in my last report. This bureau has been able to attend to such matters in a

more orderly and deliberate manner than that in which they were formerly attended to, and has been very busily occupied. Experience has confirmed me in the belief that the action of Congress in making the appropriation was judicious and timely.

REFORM SCHOOL, DISTRICT OF COLUMBIA.

The report of the board of trustees of the Reform School of the District of Columbia (Exhibit L) shows that at the beginning of the last fiscal year there were in the school 237 boys; there were received during the year 172—a total of 409, as against 340 for the previous year. There were discharged during the year 159, leaving in the school June 30, 1902, 250. I agree with what the trustees say as to the necessity for an additional family building and as to the salaries of the superintendent and assistant superintendent, and endorse both of these recommendations. I think they should be acted upon at the present session.

REFORM SCHOOL FOR GIRLS.

The report of the board of trustees of the Reform School for Girls, District of Columbia, shows an increase in the number of inmates from 2 white and 38 colored girls on June 30, 1901, to 5 white and 61 colored girls on June 30, 1902. The large increase in the number of colored girls makes the demand for further accommodations for this class urgent, as the limit of room at present available has already been reached.

I recommend that a much-needed brick building of moderate size, to be used as quarters for the male officers and employees and for storerooms be provided. The cost of such a building, with its equipments, would not exceed $6,000. An increase in the salaries of the engineer, assistant engineer, and industrial teachers, in order that people who are duly qualified for this service may be obtained, is also recommended.

The healthy growth and development of the school during the past year has been apparent in respect to all sides of its life—discipline, health, and training of the inmates, and physical improvement of the property.

For further details respecting the school, I call attention to the annual report of the board of trustees, and its subsidiary reports, which will be found in the appendix to this report as Exhibit M.

LIBRARY.

The librarian, in his report (Exhibit I), suggests that some appropriation be made for providing the Department library with books which are not of a strictly legal character but are constantly needed for use in the consideration of many questions which the Attorney-

General is called upon to decide, such as general periodicals treating of sociology, political science, and kindred subjects, in which it is now almost totally deficient. I think this is a matter which should be acted upon by Congress. I also approve the librarian's request for an assistant, at a compensation of $900, and have included an item covering this in the estimates for the coming fiscal year.

EXHIBITS ACCOMPANYING THIS REPORT.

Exhibit 1 is a tabular statement showing the number of cases, civil and criminal, before the United States circuit courts of appeals during the fiscal year 1902, with the number disposed of.

Exhibit 2 is a report of the Assistant Attorney-General in charge of the business of the Government in the Court of Claims.

Exhibit 3 is a report of the Assistant Attorney-General in charge of Indian depredation claims.

Exhibit 4 is a report of the Assistant Attorney-General in charge of the business of the Government before the Spanish Treaty Claims Commission.

Exhibit 5 is a report of the United States attorney for the Court of Private Land Claims.

Exhibit A is a statement of the civil suits to which the United States is a party, terminated in the circuit and district courts of the United States during the fiscal year ending June 30, 1902, and of such suits pending in said courts July 1, 1902, as reported by the district attorneys.

In 865 of the 2,672 civil suits terminated during the last fiscal year judgments were for the United States; in 232 against the United States, and 575 were either dismissed or discontinued; 58 were appealed to the circuit court or to the circuit court of appeals, and 12 to the Supreme Court.

Many of the civil suits reported dismissed were settled by authority of the Treasury Department and discontinued under its direction. There were pending July 1, 1902, 4,180 civil suits to which the United States was a party.

Exhibit B is a statement of the criminal prosecutions terminated in the circuit and district courts of the United States during the last fiscal year and of such prosecutions pending July 1, 1902.

Of the 16,350 criminal prosecutions terminated during the last year 2,801 were prosecutions under the customs laws, in which there were 149 convictions, 28 acquittals, and 57 were entered nolle prosequi, discontinued, or quashed; 4,382 under the internal-revenue laws, in which there were 2,801 convictions, 629 acquittals, and 952 were entered nolle prosequi, discontinued, or quashed; 1,269 under the post-office laws, in which there were 878 convictions, 100 acquittals, and 291 entered nolle prosequi, discontinued, or quashed; 44 under naturalization acts, in

which there were 32 convictions, 5 acquittals, and 7 entered nolle prosequi, discontinued, or quashed; 1,390 under the intercourse laws, in which there were 916 convictions, 131 acquittals, and 343 entered nolle prosequi, discontinued, or quashed; 220 under the pension laws, in which there were 137 convictions, 18 acquittals, and 65 entered nolle prosequi, discontinued, or quashed; 63 for embezzlement, in which there were 34 convictions, 7 acquittals, and 22 entered nolle prosequi, discontinued, or quashed; 8,547 miscellaneous prosecutions, in which there were 5,334 convictions, 885 acquittals, and 2,328 entered nolle prosequi, discontinued, or quashed.

In many of the prosecutions under the internal-revenue laws entered nolle prosequi, discontinued, or quashed a compromise and settlement were made in the Internal-Revenue Bureau of the Treasury Department.

Of the 9,602 criminal prosecutions pending July 1, 1902, 262 were for violation of customs laws, 3,504 for violation of internal-revenue laws, 722 for violation of post-office laws, 10 under the election laws, 100 under the naturalization laws, 909 under the intercourse laws, 185 under pension laws, 74 for embezzlement, and 3,836 miscellaneous prosecutions.

Exhibit C shows the amount arising and realized from civil suits to which the United States was a party and from criminal prosecutions in the circuit and district courts of the United States during the last fiscal year.

The aggregate amount of the judgments rendered in favor of the United States in civil suits pending the last year was $864,144.62, and the amount actually collected on these judgments was $76,399.64, while $172,207.98 was obtained during the year on judgments rendered in former years for the United States, and $72,259.41 was otherwise realized in civil suits.

The aggregate amount of fines, forfeitures, and penalties imposed during the year in criminal prosecutions was $688,946.07, and the amount of these fines, forfeitures, and penalties collected during the year was $180,247.10, while $20,518.67 was realized on fines, forfeitures, and penalties imposed in former years.

Exhibit D is a statement of civil suits to which the United States was not a party, commenced and terminated in the circuit and district courts of the United States during the last fiscal year; and of such suits pending July 1, 1902, 11,514 were commenced during the year, of which 1,726 were cases in admiralty and 9,788 were other miscellaneous suits.

Judgments for plaintiffs in these cases were as follows: seven hundred and thirty-nine in admiralty, amounting to $1,335,034.21, and 950 in other suits, amounting to $30,111,908.06.

Judgments for defendants were 129 in admiralty, amounting to $10,733.77, and 950 in other suits, amounting to $242,664.74; 887 in

admiralty were either dismissed or discontinued, as were also 5,372 other suits; 40,158 civil suits to which the United States was not a party were pending in the district and circuit courts of the United States July 1, 1902, viz. 4,767 in admiralty and 35,391 other miscellaneous suits.

Exhibit E is a general statement of all appropriations placed under the Department of Justice which were available and those from which payments were made during the fiscal year ending June 30, 1902.

Exhibit F 1 is a statement of the court expenses incurred in the fiscal year 1900 and paid in the fiscal year 1902.

Exhibit F 2 is a statement of the court expenses incurred in the fiscal year 1901 and paid in the fiscal year 1902.

Exhibit F 3 is a statement of the court expenses incurred and paid in the fiscal year 1902, viz:

To United States marshal	$1,198,743.95
To attorneys and assistants	547,180.32
To special assistant attorneys	30,759.25
To clerks	160,658.63
To jurors	690,094.00
To witnesses	954,335.81
To commissioners	90,892.55
To prisoners	686,706.79
To rent	81,170.23
To bailiffs	167,686.80
To miscellaneous expenses	287,526.27
To rent and incidental expenses	1,750.00
To salaries, court-house, District of Columbia	14,080.00
To increase, Library of Congress	1,500.00
To salaries and expenses	8,850.00
Total	4,921,934.60

Exhibit F 4 is a statement showing items, amounts, cause of expenditure, and persons paid from the appropriations for contingent expenses, Department of Justice, including the appropriations for furniture and repairs, books for Department library, books for office of the Solicitor, stationery, official transportation, and miscellaneous items.

Exhibit G shows the number of special assistant attorneys and the compensation paid each, as required by sections 195 and 385, Revised Statutes.

Exhibit H is the report of the Solicitor of the Treasury, showing the amount, character, and results of the litigation under his direction for the fiscal year ending June 30, 1902.

Exhibit I is the report of the librarian of the Department.

Exhibit J is a detailed statement giving names of the institutions where United States prisoners are confined, their location, and the number of convicts in each.

Exhibit K is the report of the warden of the United States Penitentiary at Fort Leavenworth.

Exhibit L is the annual report of the president of the board of trustees of the Reform School of the District of Columbia for the fiscal year ending June 30, 1902.

Exhibit M is the report of the president of the board of trustees of the Girls' Reform School of the District of Columbia for the fiscal year ending June 30, 1902.

Exhibit N is the annual report of the warden of the United States jail in the District of Columbia.

Exhibit O is a report of the Superintendent of the Capitol Building and Grounds upon the improvements and repairs to the court-house, District of Columbia, during the fiscal year ending June 30, 1902.

Exhibit P is a report of the attorney in charge of pardons, Department of Justice, showing the names of the prisoners convicted in the United States courts who were pardoned during the fiscal year ending June 30, 1902, the districts in which they were tried, the term of court at which they were convicted, their offenses, sentences, dates of pardon, and the principal reasons for recommending Executive clemency.

Exhibit Q is a report of the special attorney in charge of matters relating to the Mission Indians.

Exhibit R is a statement showing, by districts, the annual salaries of United States district attorneys, their assistants and clerks, and the expenses claimed and approved by this Department for the fiscal year 1902.

Exhibit S is a statement showing, by districts, the salaries paid to United States marshals, their deputies, and clerks, their expenses of travel and subsistence, as claimed and approved, and the fees earned and compensation payable out of said fees, as claimed and as approved, together with amounts paid to clerks of United States courts for deposit for the fiscal year 1902.

Exhibit T is a statement showing emoluments and office expenses of clerks of the United States courts, as indicated by their emolument returns, for the fiscal year ending June 30, 1902.

Exhibit U is a report on bankruptcy matters.

Exhibit V is the report of the attorney-general of Porto Rico.

Exhibit W is the report of the warden of the United States penitentiary at Atlanta, Ga.

Exhibit X is a statement of receipts, disbursements, and deposits from licenses and other sources by clerks of United States courts in Alaska.

The exhibits are a part of this report.

P. C. KNOX,
Attorney-General.

REPORT

OF

THE POSTMASTER-GENERAL.

POST-OFFICE DEPARTMENT,
Washington, D. C., November 20, 1902.

The PRESIDENT:

I present the annual report of the Post-Office Department for the fiscal year ended June 30, 1902, with the following statement of the financial operations of the Department for that year as compared with the previous year:

	1901.	1902.
Ordinary postal revenue	$109,531,778.67	$119,958,229.40
Receipts from money-order business	1,668,659.29	1,889,817.86
Other sources	430,755.43	
Total receipts from all sources	111,631,193.39	121,848,047.26
Total expenditures for the year	115,554,920.87	124,785,697.07
Excess of expenditures over receipts	3,923,727.48	2,937,649.81

A decrease in the deficit from the previous fiscal year of $986,077.67.

ESTIMATES.

The estimate of the revenues and expenditures of this Department for the fiscal year ending June 30, 1904, which has been transmitted to the Secretary of the Treasury, is given below, together with such other items as may be necessary to show the basis upon which the calculations are made:

Total postal revenue for 1902	$121,848,047
Add 9 per cent for estimated increase year ending June 30, 1903	10,966,324
Estimated revenue for 1903	132,814,371
Appropriation for postal service for 1903	138,416,598
Estimated deficit for 1903	5,602,227

Estimated revenue for 1903	$132,814,371
Add 9 per cent for estimated increase year ending June 30, 1904	11,953,293
Estimated revenue for 1904	144,767,664
Estimated expenditure for 1904	153,010,520
Estimated deficit for 1904	8,242,856

This estimate is based upon the ordinary business of the service, and without considering the effect of especial measures, the results of which are not yet determined.

RECEIPTS AND EXPENDITURES BY DECADES.

Taking up by decades the receipts and expenditures of the post-office service since 1792, these results are shown:

Year.	Number of offices.	Receipts.	Expenditures.	Surplus.	Deficit.
1792	195	$67,443	$54,530	$12,913	
1802	1,114	327,044	269,866	57,178	
1812	2,610	649,208	540,165	109,043	
1822	4,709	1,117,490	1,167,572		$50,082
1832	9,205	2,258,570	2,266,171		7,601
1842	13,733	4,546,849	5,674,752		1,127,903
1852	20,901	6,925,971	7,108,459		182,488
1862	28,875	8,299,821	11,125,364		2,825,543
1872	31,863	21,915,426	26,658,192		4,742,766
1882	46,231	41,883,005	40,482,021	1,400,984	
1892	67,119	70,930,475	76,980,846		6,050,371
1902	75,924	121,848,047	124,809,217		2,961,170

In 1860, three years before city free delivery was established, the gross postal receipts were $8,518,067, and the expenditures $19,170,610, leaving a deficit of $10,652,543. The magnitude of postal development is indicated by the fact that for the fiscal year 1902 the postal receipts were $121,848,047, and the increase of receipts during the past fiscal year over the year preceding was $1,698,786 greater than the gross receipts for the year 1860.

INCREASED EXPENDITURES AND DIMINISHED DEFICITS.

The increase in postal revenues not only attests the wonderful prosperity of the people and the activity of business interests throughout the country, but also indicates that the extension of postal facilities carefully directed results sooner or later in increased receipts and diminished deficits. With phenomenal growth of population and other favoring conditions, the mail matter poured into the post-offices has rapidly helped to lessen the percentage of deficiencies. Despite largely increased expenditures, the revenues gradually approximate the expenses after each added outlay has marked a new standard.

In 1872 the receipts of the Post Office Department were in round

numbers $22,000,000, against an expenditure of $26,500,000, a deficiency of $4,500,000, or 20.45 per cent of the revenue. In 1882 the receipts were $42,000,000, against an expenditure of $41,000,000, showing a surplus of $1,000,000. In 1892 the receipts had increased to $71,000,000, against an expenditure of $77,000,000, leaving a deficiency of $6,000,000, or 8.45 per cent of the revenue. In 1902 the receipts were about $122,000,000, with an expenditure of nearly $125,000,000, reducing the deficiency to about $3,000,000, or 2.46 per cent of the revenue.

POSTAL REDUCTIONS FOLLOW INCREASED RECEIPTS.

Deficits in the postal service are not to be viewed with apprehension. It is the policy, whenever the postal receipts exceed or come near the expenditures, to extend postal facilities and cheapen the cost of the service to the public.

The receipts in 1882 indicated such a healthy condition of the postal revenues and expenditures as to induce Congress to distribute the benefits of the surplus among the people in the reduction of letter postage from 3 cents per half ounce to 2 cents per ounce. Inasmuch as the revenue received from first-class matter at the old rate of 3 cents per half ounce was about $16,000,000, the reduction of postage to those writing letters was in the neighborhood of $5,000,000.

Under the seemingly double handicap of reduced rates and increased weights, the Post-Office Department was compelled to face a newly created deficiency, which, in 1885, was about $7,500,000. In 1892 it was $6,000,000, and from that year until 1897 the deficiency grew to $11,000,000. During all this time the beneficent grant of cheaper postage not only aided business, but promoted the exchange of personal communications. It helped the farmers to secure the free distribution of literature from State agricultural experiment stations, which Congress authorized in 1887. The rates of postage on seeds and bulbs were reduced at that time one-half. Congress also reduced the rate on college papers from 1 cent for 2 ounces to 1 cent per pound. Rates of postage on first, second, third, and fourth class matter have been reduced, yet with all these additions to the burden of the mails the significant fact remains that the deficiencies in recurring periods have grown smaller in their percentage relation to the revenues.

PAY AND HOURS OF CLERKS IN POST-OFFICES.

Efforts have been made in the past and are now being made to better, wherever possible, the condition of postal employees. This is especially so in the case of clerks in post-offices. There were upward of 12,000 clerks promoted on July 1 last, the aggregate allowance for these promotions being about $1,200,000. Fully 11,000 of these promotions were of clerks who received less than $1,000 per annum.

Recognition in this respect was given clerks who had been not less than one year in the service, and who demonstrated by their efficiency and work that they were entitled to promotion.

The working hours of clerks in the larger post-offices were also reduced so as not to average more than eight hours a day. To enable these large post-offices to bring the time of clerks within eight hours, additional clerks were granted. These clerks have been materially benefited by the increase in their salaries and the diminution of their hours of labor.

In dealing with this or any other subject concerning the postal service, the Department must take into consideration the entire postal field, having in mind the service and its requirements, and should confine the expenditures, as near as possible, within the limits of the revenues, so that the service will not become a serious burden to the people.

RURAL FREE DELIVERY.

Rural free-delivery service has become an established fact. It is no longer in the experimental stage and undoubtedly Congress will continue to increase the appropriation for this service until all the people of the country are reached, where it is thickly enough settled to warrant it. The estimates of the Department are to the effect that the available territory for this service embraces about 1,000,000 square miles, or one-third of the country's area exclusive of Alaska. The 11,650 routes now in operation cover about one-third of the available territory. From this it will be seen that it will require 27,000 employees additional to those now in the service to cover this territory. If Congress shall make the necessary appropriations, it is believed that within the next three years the extension of the service will have been completed.

With the carrier's salary fixed at $600 per annum the annual gross cost of the completed rural free-delivery service will approximate $24,000,000. After the service has been completed this increase ought not to exceed annually 8 to 10 per cent, or in about the same proportion as obtains in other branches of the service. The people are demanding the service with impatient earnestness, and this demand is being vigorously supported by their Representatives in Congress. The rapid extension of the service will, of course, increase the deficits during the next three years. After it is completed the revenues will quickly feel the effect of its establishment, and whatever deficit may be occasioned will gradually disappear. The experience of the Department in counties where the service has been fully established for a period of two years justifies the belief that the revenues in the rural districts will increase fivefold over what they have under the conditions heretofore prevailing.

The Department is unable, even with the liberal appropriation made by the Congress, to meet the pressing and justifiable demands for the service.

In fact, the appropriation for the year ending June 30, 1903, will be so far used by January 1 next that no new routes can be established after that date, unless an additional appropriation is made by the Congress that will be immediately available.

PROGRESS OF RURAL FREE DELIVERY.

Five years of experiment in this service, added to several months' experience under permanent organization controlled by the civil-service regulations governing other branches of the postal service, have demonstrated that all the claims heretofore advanced in advocacy of the extension of rural free delivery and its adoption as a permanent feature of postal administration have been sustained.

POSTAL RECEIPTS INCREASED.

It was said that its development would increase postal receipts. Every route established, with one or two exceptions (and these have been recently ordered discontinued), has shown a marked and continuous increase of mail matter delivered and collected, attributable solely to the facilities afforded.

In this connection it will also be interesting to note that rural free-delivery carriers received applications during the past year for 625,946 money orders.

VALUE OF FARM LANDS ENHANCED.

It was claimed that rural delivery would increase the value of farm lands. Official reports indicate that in communities served by rural free delivery, isolated farms have been enhanced in value because of that service at an average rate of at least 5 per cent in the older-settled States, and in the more remote States and Territories, where postal facilities have heretofore been few and far between, the increase of value has been much greater.

FARMERS BROUGHT INTO TOUCH WITH THE MARKETS.

It was asserted that to bring the farmers into close touch with the markets would enable them to obtain better prices for their products. Specific instances have been brought to the attention of the Department where the prompt delivery of live-stock quotations, indicating a temporary glut in the market, to farmers intending to ship to the stock-yards, by enabling them to hold back their shipments till the markets resumed their normal conditions, has saved to individual cattle raisers

more than the total cost of one year's rural delivery over the routes on which they lived. On the other hand, in many instances, information of an advance in the prices of particular farm products has reached the grower, by means of rural free delivery, in time to enable him to make a much more profitable bargain with his commission merchant than he could otherwise have done.

SOCIAL AND EDUCATIONAL BENEFITS CONFERRED.

Lastly, the claim was made that all these material advantages would be equaled if not surpassed by the social and educational benefits conferred in relieving the monotony of rural life, by bringing city and country into close connection, and giving the farmer an opportunity of keeping abreast with the rest of the world, through the daily receipt of his newspapers and correspondence, as had hitherto been enjoyed exclusively by the city man. How thoroughly these features of the service have justified the claims made in their behalf is known to all who are familiar with the operation of the rural free-delivery system.

GENERAL EFFECTS ON THE REVENUES.

In respect to the net cost of the service, which it was at one time thought would be greater than the postal revenues could bear, the facts are that while the appropriations for its development have increased from $40,000 in 1897 to $50,000 in 1898, $150,000 in 1899, $450,000 in 1900, $1,750,000 in 1901, and $3,993,740 in 1902, the annual excess of expenditures over revenue in the Post-Office Department for these respective years, as elsewhere shown, has been practically in inverse ratio to the expenditure for rural free delivery.

The effect of the extension of the service is twofold.

First, it causes increase in the postal receipts of the offices from which it starts.

Secondly, it is responsible in part, at least, for the increase in the receipts of city free-delivery offices with which it is brought into close communication.

THE INCREASE PERMANENT.

Nor are these results sporadic. The increment is steady and continuous. So, also, is the diminution of other postal expenditures which are taken up by the rural service. Figures which only in part represent the result obtained in this direction indicate that 2,149 postmasters of the fourth class, who returned no revenue to the Government, but, by provision of law, retained their gross receipts as compensation for their services, were dropped from the service between November 1, 1901, and October 31, 1902. The total revenues of these

offices during the fiscal year ending 1901 amounted to $142,660. During the same period 1,668 star-route contracts, which supplied the offices thus discontinued, have been abrogated. The aggregate annual outlay involved in these star routes was $275,469.

In the process of gradually extending rural service over whole counties, which has been for some time in progress, every small post-office, except a few retained as postal stations, and all star routes, except those necessary to make connection between the distributing offices, are eliminated. As rural service is broadening and is made more systematic in its installation, the lopping off of expenditures, which it renders unnecessary will be more easily accomplished.

MORE FUNDS NEEDED.

Its establishment has been carefully kept within the limits laid down by the annual appropriations of Congress. No service has been ordered into effect unless there was available the requisite appropriation to meet it. But the Department is unable to control the demands of the people. Every new rural route put into operation excites in neighboring communities a desire to be given similar facilities.

Between July 1, the commencement of this fiscal year, and November 1 nearly as many routes have been actually started as were established during the whole of the last fiscal year. Approximately, 650 additional routes have been ordered into effect, to begin November 15 and December 1, 1902. When these services have been established they, with some additional routes, for the installation of which orders have been issued to commence on January 1, 1903, will nearly, if not quite, exhaust the appropriation made for the continuation and extension of rural free delivery during the fiscal year ending June 30, 1903. Therefore, after this fact shall have been ascertained, and unless otherwise directed by Congress, all other completed service will be assigned for commencement with the beginning of the new fiscal year, July 1, 1903.

NO DEFICIENCY CREATED.

If it should be the pleasure of Congress to accelerate the establishment of the rural routes laid out and awaiting action and to expedite the installation of other routes now in course of investigation, prompt action will be taken by the Department should any additional appropriation be made for that purpose. In the absence of such appropriation, it will be necessary at an early date to withdraw from the work of installing new service the special agents and route inspectors now so employed, and to assign them to the duty of inspecting, rearranging, and improving the services already established.

FREE DELIVERY IN SMALL TOWNS.

With the extension of rural free delivery thus actively progressing complaints arise in other communities. Cities of 10,000 population, or $10,000 gross postal receipts, receive a free-delivery service at least twice a day, in many cases oftener. Residents of remote rural districts to which the rural service has been extended have a free delivery of mail brought within reach of them once a day. Residents of towns of less than 10,000 population, or $10,000 gross postal receipts, have no free delivery at all. There is a popular demand, which is based on equity and reason, that the space which now intervenes between city and rural service should be diminished by extending free delivery to towns of not fewer than 5,000 population, or not less than $5,000 gross postal receipts.

EQUALIZATION OF PAY OF SUBSTITUTE CITY CARRIERS.

Under existing conditions there is inequality and injustice in the compensation of substitute letter carriers in free-delivery cities. They pass a civil-service examination, give bond, and provide themselves with uniforms. In the larger cities they report daily for duty; in the smaller towns they are required to remain within reach of the office, subject to call. They constitute a reserve force always ready to meet emergency. Yet, outside of a nominal salary of $1 per annum, they have no fixed compensation. Their earnings are irregular and uncertain, depending upon the number of days they are called into temporary service as substitutes and upon the fees they receive for carrying special-delivery letters. It is urged that the Government guarantee to each substitute letter carrier in the larger cities, where the regular carriers receive $1,000 a year salary, a compensation of at least $30 a month; and in the smaller cities, where the regular pay is $850 a year, a compensation of at least $25 a month. This plan, if adopted, will insure to each reserve carrier the certainty of a fixed living income, and is not likely to involve the Government in any considerable expense.

MONEY-ORDER BUSINESS.

The money-order business has largely increased during the fiscal year, both in the number of orders issued and the amount of money involved. The number of domestic money orders issued was 40,474,327, amounting to $313,551,279. The number of international money orders issued during the year was 1,311,111, amounting to $22,974,473. The number of international orders paid during the year was 307,679, amounting to $5,821,729. It will be interesting to note in this con-

nection that the amount of the foreign orders issued was nearly four times as great as the amount paid.

This business of the Department is a source of considerable income, and it is therefore believed that the time has come to make a slight reduction in the charge made for the issue of a money order for the maximum sum, $100. The fee at present for an order for $100 is 30 cents, and it is recommended that legislation be passed authorizing the Department to reduce this fee to 25 cents.

POSTAL CHECKS.

Millions of our people live more or less remote from any post-office, and a very large proportion of them are not able to buy money orders or bank drafts without great inconvenience. It is not unreasonable to expect from the Government that it will provide an easy, convenient, and safe method to transmit small sums, say, $2 or less in amount, without putting the sender to the inconvenience and expense which now obtains in the purchase of a draft or post-office money order.

I urge upon Congress the importance of passing some law, so that our people may have the advantage of it at as early a date as possible. Hundreds of thousands of letters carrying small amounts in silver or postage stamps are transmitted every year through the mails. These letters are a constant temptation to those handling them, as it is easy to identify letters inclosing currency.

With the extension of the rural free-delivery service to the remote parts of the country, the use of postal checks would go far to provide the relief so urgently demanded, as it would conveniently serve those sections of the country not heretofore covered by or adjacent to money-order offices or the banks of the country.

POSTAL REVENUE IN DETAIL.

The postal revenue from all sources was as follows:

Sales of stamps, stamped envelopes, newspaper wrappers, and postal cards	$112,187,120.41
Second-class postage (pound rates), paid in money	4,541,523.59
Box rents	2,992,085.04
Revenue from money-order business	1,889,817.86
Letter postage paid in money, principally balances due from foreign postal administrations	123,017.18
Miscellaneous receipts	50,242.58
Fines and penalties	45,810.81
Receipts from unclaimed dead letters	18,429.79
Total receipts	121,848,047.26
Excess of expenditures over receipts	2,937,649.81
Expenditures	124,785,697.07

EXPENDITURES IN DETAIL.

The expenditures of the postal service for the year are shown, by items, in the following statement:

Transportation of mails on railroads	$34,700,000.00
Compensation to postmasters	20,783,919.97
Free-delivery service	17,123,310.90
Compensation of clerks in post-offices	14,434,047.70
Railway Mail Service	10,264,588.38
Transportation of the mails on star routes	5,725,531.00
Railway post-office car service	4,657,368.57
Experimental rural free delivery	3,993,706.51
Transportation of foreign mails	2,268,690.75
Rent, light, and fuel for first, second, and third class post-offices	2,122,299.29
Compensation to assistant postmasters at first and second class post-offices	1,479,674.05
Mail-messenger service	1,025,245.50
Transportation of mails—regulation, screen, or other wagon service	788,423.59
Special-delivery service	621,645.85
Manufacture of stamped envelopes	621,327.30
Transportation of mails on steamboats	563,062.75
Mail depredations and post-office inspectors	529,096.21
Transportation of the mails, electric and cable cars	389,987.61
Manufacture of postage stamps	281,922.29
Mail bags and catchers	273,844.02
Miscellaneous items at first and second class offices	250,477.10
Canceling machines	195,418.25
Transportation of the mails, special facilities	150,319.13
Balances due foreign countries	141,782.07
Payment of money orders more than one year old	130,365.11
Registered-package, tag, official, and dead-letter envelopes	126,649.85
Blanks, blank books, etc., for money-order service	120,752.65
Wrapping twine	116,707.38
Manufacture of postal cards	111,670.56
Stationery for postal service	69,439.97
New territory and military postal service	49,637.09
Mail locks and keys	42,150.44
Postmarking and rating stamps	37,446.44
Wrapping paper	29,970.32
Printing facing slips, slide labels, etc	26,584.03
	124,247,062.63
Expenditures under twenty smallar items of appropriation	145,409.39
Total expenditures for the year	124,392,472.02
Add expenditures during the year on account of previous years	393,225.05
Total expenditures during the year	124,785,697.07

MAIL TRANSPORTATION.

At the close of the last fiscal year the total number of domestic routes of all classes was 34,711; their length 507,540 miles; and the annual travel 474,234,687 miles. Compared with the preceding year this is a decrease in length of routes of 1,267 miles, but an increase in

annual travel of 8,088,628 miles. The expenditure for such service for the year was $59,281,877.53, an increase of $2,471,635.47.

STAR ROUTES.

There were 21,767 star routes, the length of which was 259,539 miles, the annual travel 130,087,224 miles, and the cost $5,646,773.59. The contracts for all the star routes in the fourth contract section, embracing all the States and Territories (three excepted) west of the Mississippi River, expired June 30, 1902, and new contracts were made for all the star service in those States and Territories for the term of four years beginning July 1 last. These new contracts covered 6,037 routes, aggregating 110,563 miles in length and 48,686,346 miles of annual travel, the latter being an increase of 2,007,838 miles, or 4.30 per cent, over the annual travel under the old contracts. The average rate per mile traveled under the old contracts was 4.83 cents; under the new contracts it was 6.58 cents. At the average rate paid under the new contracts—6.58 cents per mile traveled—a contractor traveling 22 miles each week day would receive a fraction over $1.44 per day, or $453.10 per annum. These contracts were let only to those persons who agreed to reside on or contiguous to their routes and to give their personal supervision to the performance of the service, and nearly all of the contracts provide for delivering mail into boxes along the routes wherever the people desire such service.

Box delivery on star routes.—The system of box-delivery service has now been applied wherever practicable to all of the first contract section, including the States from Maine to West Virginia, having 5,578 routes, and to the fourth contract section, including the States and Territories (three excepted) west of the Mississippi River, having 6,037 routes, to the State of South Carolina, and to miscellaneous routes throughout the remainder of the country wherever new contracts have been made, so that the people on considerably more than half of all the star routes in the United States are now given the advantages of this box-delivery service. The fiscal year just closed was the first year of the contracts for this class of service in the first contract section, Maine to West Virginia, and in June last inquiries were sent to each of the routes to ascertain the extent to which the box delivery was being utilized. The replies received from 4,840 routes show that 32,798 boxes or cranes have been erected along these routes and that 42,729 families are having their mail delivered to them by the carriers through such boxes or bags attached to cranes. Reports indicate that such service is generally satisfactory to the people who are availing themselves of it.

Star service discontinued.—The star service discontinued during the year ended June 30, 1902, by reason of the establishment of rural free-delivery service, amounted to $265,013.98.

ALASKA.

The contracts for all mail transportation in Alaska expired on June 30 last and new contracts were executed for service for the term beginning July 1. The first mail transportation by railroad authorized in Alaska was that which was established last May on the railroad between Skagway and White Pass, near the Canadian boundary line, a distance of 20 miles. Beginning July 1 the Canadian department assumed the transportation of mails over her territory between the boundary line near White Pass and the boundary line near Eagle, Alaska. Among the principal routes included in the new contracts is one along the Yukon River from Eagle to Tanana, 567 miles, and one from Tanana to St. Michael, 423 miles, on which the mails are carried not less frequently than once a week, except for four months of the year while the ice is either forming or breaking on the Yukon River, when the service is to be twice a month.

As the mails on these routes in the winter time must be carried by dog teams and sleds, the weight is limited during the winter, but the contracts provide for carrying the mails by steamers during the summer season on the Yukon without limit of weight as often as the steamers may run, which will be more frequently than the mails are carried at other seasons. There is a connecting route from Nome to Unalaklik, 230 miles, also an overland route from Eagle to the southern coast at Valdez, 413 miles, twice a month, in connection with steamers to and from Seattle. Service has been established from Fort Yukon to Bettles, 250 miles, one round trip a month, except in May and October. All of this route is north of the arctic circle. Contracts have also been renewed for carrying all classes of mail without limitation of weight during the season of navigation from both Seattle and San Francisco to Nome and St. Michael and for a connecting steamer line from St. Michael to Golovin, Nome, Teller, and York. During the summer just closed mail-steamer lines were extended farther north than theretofore, and mails were carried from Nome, by Shishmaref, Deering, and Kotzebue Mission, to the mouth of the Kowak River, a distance of 331 miles.

HAWAII AND PORTO RICO.

Temporary contracts for mail transportation in Hawaii made after the service in the Hawaiian Islands was assumed by the United States expired June 30 last, and the first general letting for a four-year term occurred last year. Under the new contracts effective July 1, 1902, there were in Hawaii 94 routes, aggregating 14,798 miles in length, with an annual travel of 764,373 miles, the cost of which was $97,456.38 per annum.

In Porto Rico there were on October 17, 1902, 47 routes, the length of which was 3,491 miles, having an annual travel of 614,114 miles, the cost of which was $80,466.74 per annum.

STEAMBOAT SERVICE.

At the close of the year there were 210 steamboat routes, the total length of which was 34,338 miles, with an annual travel of 5,416,397 miles, costing $598,251.05 per annum. Compared with the previous year this was an increase of 367 miles in length of routes, 764,139 miles in annual travel, and $55,265.73 in annual cost. The service in the fourth contract section was relet last year for the term of four years beginning July 1, 1902, and the increase in cost under the new contracts was $62,867.41 per annum.

MAIL-MESSENGER SERVICE.

On June 30 last there were 7,542 mail-messenger routes, aggregating 5,258 miles in length, 10,495,622 miles of annual travel, at a cost of $1,055,974.06 per annum. In this service there was an increase of 167 miles in length of routes and $60,162.30 in annual cost.

PNEUMATIC-TUBE SERVICE.

No pneumatic-tube service was in operation last year, as Congress made no provision therefor, but the appropriation act for the current year, approved April 21, 1902, appropriated $500,000 for pneumatic-tube service and authorized the Postmaster-General to enter into contracts for service not exceeding an annual expenditure of $800,000. Pursuant to this statute advertisements were issued inviting proposals for a system of pneumatic-tube service in Boston, New York, Philadelphia, Chicago, and St. Louis.

RAILROAD TRANSPORTATION.

On June 30, 1902, there were 2,844 railroad routes, the total length of which was 187,129 miles, with an annual travel of 312,521,478 miles, costing $35,049,211.22. The increase in the length of routes was 3,771 miles, in annual travel 9,908,153 miles, and in annual expenditure $1,167,820.98. A weighing of the mails was had on all of the railroad lines in the fourth contract section, including all the States and Territories (three excepted) west of the Mississippi River, and the result of the regular quadrennial readjustment of pay for railroad transportation in those States and Territories for four years beginning July 1 last was an increase in annual cost of $1,374,010.65, being 14.91 per cent.

ELECTRIC CAR SERVICE.

There were in operation on June 30 last 327 electric car routes, aggregating 3,508 miles in length, 7,534,757 miles in annual travel, and costing $414,348.75. The increase in length was 551 miles, in annual travel 945,348 miles, and in annual expenditure $51,734.58.

RAILWAY MAIL SERVICE.

Extent of service.—At the close of the year there were 1,350 lines of traveling post-offices, covering 178,796 miles in length. The number of clerks employed was 9,731, annual travel by them in cars 221,589,999 miles. To accomplish this, 3,785 cars and apartments were used on the steam roads, besides 24 cars on the electric lines under the supervision of the Railway Mail Service, and 83 apartments on steamboats. It is estimated that these clerks handled 15,062,830,640 pieces of ordinary mail and 24,174,174 packages and cases of registered mail. The errors by clerks in handling the mail as reported indicate but 1 error made for every 11,502 pieces correctly distributed.

Casualties.—There were 286 casualties to mail cars last year, in which either mail or clerks were injured. Nine clerks were killed and 88 seriously and 302 slightly injured. In the appropriation act for the current fiscal year provision was made for the first time authorizing the Postmaster-General to pay to the legal representatives of any railway postal clerk who shall be killed while on duty, or who, being injured while on duty, shall die within one year thereafter as the result of such injury, the sum of $1,000. This afforded a much-needed relief in that class of cases and supplements the practice of the Department to continue to pay a clerk injured while on duty his full salary for a period not exceeding one year after the injuries are received, unless sooner able to resume duty, Congress having made provision for the employment of acting clerks in place of clerks so injured.

Protection of clerks.—Legislation is needed for the protection of railway postal clerks while in the discharge of their duties. This is a matter which has been fully presented in previous annual reports.

Improvements.—New and improved service in lines of full railway post-office cars or apartment cars during the past fiscal year was applied to 34,695 miles, which is in excess of the record of any previous year. Additional car space was provided on lines aggregating over 8,000 miles in length. New trains at a high rate of speed have been placed in operation on several of the trunk lines, furnishing greatly improved schedules for the movement of the mails, and by the extension of other lines new connections have been developed for the more expeditious transmission of mails to and from important sections of the country.

Reorganization and reclassification.—While no general law has been enacted by Congress for the reorganization and reclassification of the

Railway Mail Service, much has been done in various appropriation bills. The salaries of clerks of the $1,200 and $1,400 classes, which for years were reduced by reason of restricted appropriations to amounts less than the maximum allowed by law, have been restored. A higher class, at $1,600 per annum, has been created for chief clerks and allowances have been made for their traveling expenses. A still higher class, at $1,800 per annum, has been established for assistant division superintendents and provision made for their traveling expenses. The salaries of division superintendents have been increased, fifteen days annual leave has been granted to clerks performing daily service, provision has been made to pay $1,000 to the families of clerks killed in the line of duty, and provision has been made for the promotion of clerks on the heavier apartment lines from $1,000 to $1,100 per annum and for the promotion of assistant chief clerks and a number of clerks on full railway post-office lines operating more than one car to a train from $1,200 to $1,300 per annum.

Registered pouches made up by postal clerks.—A change has been made in the distribution and dispatch of registered matter that will result in shortening the transit time of that class of matter without affecting its security. The schemes for the distribution of registered matter have been changed so as to avoid the delays at exchange offices, the matter heretofore inclosed in the through registered pouches being omitted to a large extent, and forwarded as hand pieces. A system of through registered pouches to be made up by the clerks of the larger lines has been inaugurated, and special equipment has been furnished with which to make such exchanges.

FOREIGN MAILS.

Last year the Department paid for the transportation of foreign mails the sum of $2,245,625.55.

The contract for ocean mail service between New York and La Guaira expired on February 28, 1902, and was replaced by two contracts—one for route No. 36, from New York to Puerto Cabello, Venezuela, once every two weeks, in vessels of the third class, and the other for route No. 37, from New York to Maracaibo, Venezuela, once every two weeks, in vessels of the fourth class; the new contracts being for a period of ten years from March 1, 1902. The contract which expired provided for service to Venezuela three times a month. The new contracts contemplate service to Venezuela once a week and to Porto Rico once every two weeks. There are now seven routes under contract for ocean mail service, at an annual rate of expenditure of $1,475,138.

Parcels post.—The parcels-post convention of the Republic of Bolivia became operative February 1, 1902. The weight of the parcels-post mails dispatched from the United States during the last fiscal year was 322,615 pounds, an increase over the weight dispatched dur-

ing the preceding fiscal year of 69,824 pounds, or 27.62 per cent. The number of parcels dispatched during the last fiscal year was 93,095. The average weight of each was 3½ pounds. The weight of the parcels post mails received during the last fiscal year was 399,887 pounds and consisted of 56,820 parcels, the average weight of each being 7 pounds. Of the total weight of 322,615 pounds dispatched, 65,616 pounds were for Germany, consisting of 24,694 parcels. In return we received from Germany 44,952 parcels, their weight being 339,348 pounds. From statistics during the months of April and May last it appears that of the parcels received from Germany more than 35 per cent are delivered in the city of New York; more than 48½ per cent in the cities of New York, Brooklyn, Hoboken, Jersey City, Boston, Philadelphia, Baltimore, and Washington; and that more than 72½ per cent are delivered east of the Mississippi River.

The parcels-post convention with Germany was in the nature of an experiment, being the first convention concluded with any of the principal countries of Europe. It has now been in full operation three years, sufficiently long to enable the Department to determine whether it should be continued in force, modified, or terminated after six months' notice.

From the statistics taken it appears that the average weight of parcels dispatched from this country to all countries only slightly exceeds 3½ pounds. The average weight of parcels dispatched from this country to Germany is 2⅔ pounds. The domestic postal service of this country does not permit the introduction of parcels heavier than 4 pounds in weight; therefore, in view of the fact that 4 pounds, as a limit of weight, will fairly meet the requirements of this country, the Second Assistant Postmaster-General recommends the tender of parcels-post conventions with England, France, Italy, and other countries of Europe, similar to that now in force between this country and Germany, with the exception that the weight of parcels be limited to 4 pounds, and that six months' notice be given to Germany of the desire of this country to modify the existing convention so as to reduce the weight of parcels from 11 to 4 pounds.

Postal Union reply envelope.—Attention is invited to the remarks of the Second Assistant Postmaster-General concerning the need of a universal stamp or some substitute for it which will facilitate international correspondence and to his suggestion of a plan which, he believes, will meet this need, and he recommends that one or more countries of the Postal Union be invited to enter into agreement with the United States to test this plan in advance of the meeting of the Postal Congress in 1904, so that the result therof may be ascertained in time to be presented when the subject shall come before that congress.

Sea post-offices.—International sea post-offices have been in continuous operation on the steamers of the International Navigation Company, the North German Lloyd Steamship Company, and the Ham-

burg-American Line. Heavy mails continue to be dispatched by steamers under contract with the British Government and on which we have not been able to secure, as yet, by mutual agreement, sea post-offices. The benefits of the sea post-office are becoming every year more apparent and justify the expense connected therewith. It is desirable, however, to secure the cooperation of Great Britain in extending the service to steamers under contract with that Government.

REDUCTION IN RATES OF FOREIGN POSTAGE.

The domestic rate of postage is 2 cents for each ounce or fraction thereof; the foreign rate is 5 cents for each half ounce or fraction thereof. A letter which would cost but 2 cents to transmit in the United States would require 10 cents in postage, or five times as much, if sent to England.

The business and social relations of the people of this country with those of certain European nations have grown to such extent that it is believed the time has come to reduce the foreign rate of postage, the present rate being considered excessive and a hindrance to the development of commerce and trade between the United States and the great commercial nations of Europe.

I recommend, therefore, that negotiations be undertaken with Great Britain, Germany, and France for the purpose of modifying the rates of postage as suggested, believing that correspondence would be stimulated to such extent that within a very short time it would result in an increase in the interchange of communications, which would bring greater returns than obtain from the present rate. Such a result followed the reduction in the domestic rates of postage.

CLASSIFICATION OF MAIL MATTER AND REVENUES THEREFROM.

It is estimated that the total weight of all mail matter, exclusive of Government free, mailed during the year was 745,742,872 pounds. The actual postage revenue derived from this source during the year was $116,728,644. The first class, exclusive of free matter, weighed 101,103,928 pounds, or about 14 per cent of the total weight, yet produced 78 per cent, or $90,950,751.72 of the total revenue from all the classes. Second-class matter—that mailed by publishers and news agents at the pound rate and that mailed by publishers free within the counties of publication—weighed 488,246,903 pounds, or about 65 per cent of the total weight of all classes, yet produced less than 4 per cent, or $4,541,523.59 of the total postage revenue. Transient second-class matter (that mailed by the public), third and fourth class matter, and matter other than first class addressed to foreign countries combined, weighed 153,675,511 pounds, or 21 per cent of the total weight of the mails, and yielded about 18 per cent, or $20,957,110.44 of the total revenue.

ABUSE OF SECOND-CLASS PRIVILEGES.

This whole subject is discussed at length in the report of the Third Assistant Postmaster-General. There is probably no feature of the postal administration which is more in the public mind than this, and attention is invited thereto. It is gratifying to be able to state that after years of discussion in the annual reports of the Department and consideration of the question by Congress, an effort has been made to curtail these abuses and substantial progress made. The regulations of July 17, 1901, are designed to properly interpret the law and so confine that privileged rate within the intent of the statute to genuine newspapers and periodical publications. It seems to have been but little appreciated that a publisher's mailing privilege under the law is in effect a subsidy.

EFFORTS TO CORRECT ABUSES.

On October 1, 1901, the privilege of sending unsold copies from one news agent to another was withdrawn. So far as known there has been no effort to evade the new ruling. Another substantial accomplishment is that periodical publications which have the characteristics of books have been rejected from the second class and are now classified as third-class mail matter. Some progress has been made in rejecting alleged newspapers and periodicals which are not bona fide, but which are mere advertising sheets or circulars. The sample-copy abuse has also been corrected by limiting the number which may be sent with each issue so that it shall be not in excess of the number of legitimate subscribers. There remains, however, much to be accomplished. The permanent effect upon the service will be awaited with interest.

RESTRAINING ORDERS.

The efforts of the Department to correct the abuses have been checked by the appeal of interested parties to the courts, and restraining orders have been issued by the Supreme Court of the District of Columbia in a number of cases, which will test the right of the Postmaster-General to classify mail matter along the lines of the policy referred to. A judicial decision regarding this policy is desirable, but the delay incident thereto is regretted, because of the very material loss of revenue to the postal service in consequence thereof.

PROPOSED NEW RATE OF POSTAGE.

There can be no doubt that it is sound public policy to continue the present cheap rates of postage on second-class matter for the benefit of all bona fide daily and weekly newspapers devoted to the dissemination of news to the public. They assuredly come within the pur-

pose of the law covering the 1-cent per pound rate, and this alone is the matter which should be mailed at such rate.

In the last ten years the number of periodicals coming within this classification has increassed enormously in number, and still more so in weight. They are not newspapers, either daily or weekly, but magazines of various kinds, published monthly or quarterly. In the opinion of the Department the time has come when this class of publications should not be carried at a less rate than 4 cents per pound, which, it is estimated, is what it costs the Government to deliver them. It is unreasonable to ask the Government to bear three-fourths of the expense of their delivery. The subsidy is too great a one, and the publishers should be satisfied if the Government carries such matter in the mails at cost to it.

The taking away of the subsidy to magazines and other periodicals, to which reference is made above, and compelling them to pay the Government a rate which will save it from actual loss, would so increase the revenues as to in a very great degree pay for the introduction of the rural free-delivery service.

I heartily concur in the recommendation of the Third Assistant Postmaster-General, who has fully treated of this subject in his report, and urge upon Congress the serious consideration of this subject as in the interest of the whole people.

I concur also in his recommendation that provision be made for receiving in the mails large quantities of identical pieces of printed matter, and small articles of merchandise without the necessity of affixing postage stamps to the individual pieces. This will effect an economy both for the public and for the Department. There will be a saving in the expense of manufacturing stamps, the sale of them to the public, and the canceling thereof in the post-offices after mailing; and the public will save in the labor of attaching the stamps to the individual pieces. These concessions, I am convinced, are due to the business interests of the country.

STAMP BOOKS.

The increase in the demand for stamps bound in books was very great. The number of books issued was 7,093,274, containing 124,468,488 2-cent stamps, which is 51 per cent more books than were issued the preceding fiscal year. The profit to the Government for the year over the cost of manufacturing the books was $43,402.92.

NEW SERIES OF POSTAGE STAMPS.

New designs, covering the entire series of adhesive and embossed stamps, are in course of preparation. It is expected that they will be ready for issue during the coming winter. The new stamps will be

much more artistic than those of the present series, and will bear the name of the subject, with the years of birth and death. This will add to the historic interest and educational value of the series. A stamp of the 13-cent denomination is provided for; it will bear the portrait of the late President Harrison. It has also been determined to place the portrait of Martha Washington on the 8-cent stamp.

REGISTRY SYSTEM.

There were transmitted in the registered mails during the year 22,831,460 letters and parcels. Of this number, 3,203,257 were free matter. As compared with the preceding year, this represents an increase of 2,010,865 in paid registrations. There was $1,570,251.44 collected in registry fees, an increase of $160,869.20 over the preceding year.

Of the total 3,203,257 pieces of official matter registered free, there were lost only 5, with an aggregate value of $115.77. When it is considered that the official matter for the Treasury and Post-Office Departments alone contained money to the amount of $1,534,946,549.14, this loss is infinitesimal. It is in effect a loss of much less than one dollar in every thirteen millions transmitted.

For all losses of first-class registered matter mailed by the public, the actual indemnity paid during the year was but $654.18.

The registry system has been improved to such an extent within the last few years that the number of annual losses is now so small as to be most remarkable. Out of 22,831,460 registered articles handled the irrecoverable losses already reported are but 171. As shown by the number of cases reported and investigated during the year, the losses averaged but one piece in every 86,156. This is a little more than one one-thousandth of 1 per cent. It is doubtful if there be a private enterprise in the world doing business of half the magnitude of the registry system, that can boast of such a record for safety and efficiency.

That the public recognizes the efficiency of the registry system is evidenced by the great increase of patronage. The average yearly increase in paid registrations for the last twenty years was 560,658 pieces. The increase for the last fiscal year (2,010,865) as compared with the fiscal year ended June 30, 1901, exceeded this average yearly increase by 1,450,207, or 258.66 per cent.

The system of registration of matter by letter carriers in the residential districts of cities and by rural carriers throughout their routes, which was inaugurated in 1900, has been increasing to a gratifying extent. During the year ending June 30, 1902, the city letter carriers registered 317,942 pieces, against 237,716 during the previous year—an increase of 80,226, or 33.74 per cent; and the rural carriers regis-

tered 114,595 pieces, against 51,428 during the previous year—an increase of 63,167, or 122.82 per cent.

Under the provisions of an act of Congress the indemnity for registered first-class matter lost in the mails has been increased from $10 to $25 for each piece, effective July 1, 1902. The indemnity applies to domestic matter only and is particularly in the interest of a large class of citizens who have no other safe method for sending remittances by mail.

RETURN POSTAL CARDS AND ENVELOPES.

The subject of return postal cards and envelopes has been much discussed by the public and considered in the Department. The four assistants to the Postmaster-General and the Auditor for the Post-Office Department were appointed a committee to consider this subject and report upon the feasibility of adopting an experimental plan. Your attention is respectfully called to the report of this commission transmitted herewith.

After having given the subject careful consideration and believing that it has great merits, I have arrived at the conclusion that it is very questionable whether, under the law as it now stands, the Department is authorized to put in operation any system which does not provide for the prepayment of postage by the affixing of stamps.

I recommend to Congress the passage of a law which confers upon the Department specific authority to introduce the system of reply postal cards and envelopes referred to, if in the discretion of the Department it shall be deemed wise and to the interests of the public.

PRESIDENTIAL POSTMASTERS.

The total number of appointments of postmasters for the year was 16,970, which is an increase of 1,313 over the previous fiscal year. The increase is occasioned by the expiration of a number of commissions of Presidential postmasters. In 1901 the commissions of only 184 postmasters expired, while for the present fiscal year there were 1,892.

The policy of the Department to hold postmasters to a strict account in the discharge of their duties is the reason for the slight increase in the number of removals. Postmasters show great improvement in the conduct of their offices and the efficiency of the service has never been better.

ESTABLISHMENT AND DISCONTINUANCE OF FOURTH-CLASS POST-OFFICES.

There were 3,038 post-offices established during the year and 4,059 discontinued. The principal cause of the discontinuance of so many post-offices was the extension of the rural free-delivery service and the establishment of rural free-delivery stations. The establishment of

this service, of course, dispenses with fourth-class post-offices as does the extension of the city-delivery service to towns adjacent to large Presidential offices. During the year there were 1,906 post-offices discontinued owing to the establishment and extension of this rural service, the aggregate of the salaries of postmasters thereat being $116,807.

CUBAN POSTAL SERVICE.

On the 20th of May, 1902, the Post-Office Department relinquished its control of the Cuban postal service and it was placed almost entirely in the hands of the Cuban Government.

Among the assets turned over to Cuba at the time of the transfer were postage stamps and stamped paper, to the value of $177,600.07, and money-order funds amounting to $183,249.71. The postal service of Cuba was placed upon an efficient and economical basis during the régime of the American officials and employees, and the methods which prevail in the conduct of post-offices in the United States were introduced generally. The service was thoroughly reorganized and improved. The revenues were gradually increased, while there was a marked decrease in the expenditures.

SUPPRESSION OF FRAUD.

The Department has continued to enforce the statutes forbidding the use of the mails in the conduct of fraudulent schemes in the most vigilant manner, resulting in the issuance of fraud orders to the number of 247 during the year. These have been directed against the promoters of various fraudulent schemes, including bond-investment and debenture companies, schemes involving fraudulent or lottery features, and various fictitious tontine and insurance companies. The power granted to the Postmaster-General under the laws referred to is very great and is exercised with the greatest care, to the end that no injustice shall be done worthy or meritorious business enterprises.

Decisions and opinions of the Assistant Attorney-General for the Post-Office Department have never been printed. A great number of these opinions are on file in his office and can not be found except through examination of a very numerous collection of letter-press books. These opinions are very valuable to the Department, for reference purposes and the establishment of precedents for future action, and, as now placed, are almost inaccessible. In printed form they would prove of great value not only to the Department, but to others outside the Department who have occasion to ascertain the opinions given in various matters of administrative policy and practice in the Department, which are only to be found in these opinions. For official and general information, I recommend that these opinions should be put in book form, and ask an appropriation from Congress for that purpose.

LEGISLATION.

The following recommendations for legislation, some of which have heretofore been made, are submitted for the consideration of Congress:

That the extension of free delivery to towns of not less than 5,000 population, or $5,000 gross annual postal receipts, be authorized.

That substitute letter carriers in cities of 75,000 population and over be guaranteed monthly earnings of not less than $30, and in cities of less than 75,000 population not less than $25.

That rural letter carriers be allowed an annual leave of absence of not to exceed fifteen days with pay.

That the maximum fee for a money order be fixed at 25 instead of 30 cents.

That section 3 of the act of June 13, 1898, chapter 446, providing that assistant postmasters, cashiers, and other employees of post-offices of the first, second, and third classes shall give bond direct to the United States, be repealed, and that a statute be enacted requiring such officers to give bond directly to the postmasters, and holding postmasters responsible under their own bonds for any and all acts and defaults occurring at their respective offices.

That the interstate-commerce law be amended to prohibit common carriers, to wit, telegraph and express companies, or any of their employees, from aiding and abetting in the green-goods or lottery swindles, or any other scheme carried on partly by mail and partly by common carrier and which is in violation of the postal laws.

That the Department be authorized to adopt a system of postal checks.

That a statute be enacted authorizing the receiving and dispatching of certain classes of mail matter without the necessity of affixing postage stamps to individual pieces.

That an act be passed conferring upon the Department specific authority to introduce a system of reply postal cards and envelopes.

Authority to print in book form the opinions rendered by the Assistant Attorney-General for the Post-Office Department.

That provision be made for new and suitable building for the manufacture and repair of mail equipment, the quarters at present occupied being entirely insufficient.

In concluding this report I desire to testify to the zealous and efficient service rendered by my assistants and the chiefs of divisions in the duties devolving upon them.

Respectfully submitted.

HENRY C. PAYNE,
Postmaster-General.

PAPERS

ACCOMPANYING

THE REPORT OF THE POSTMASTER-GENERAL.

REPORT OF THE ASSISTANT ATTORNEY-GENERAL FOR THE POST-OFFICE DEPARTMENT.

OFFICE OF THE ASSISTANT ATTORNEY-GENERAL,
FOR THE POST-OFFICE DEPARTMENT,
Washington, October 31, 1902.

SIR: I have the honor to submit the following report of the operations of this office for the fiscal year ended June 30, 1902.

By the regulations of the Post-Office Department the Assistant Attorney-General is charged with the duty of giving opinions to the Postmaster-General or the heads of the several offices of the Department on questions of law arising upon the construction of the postal laws and regulations, or otherwise, in the course of business in the postal service; with the consideration and submission (with advice) to the Postmaster-General of all claims of postmasters for losses by fire, burglary, or other unavoidable casualty, and of all certifications by the Auditor for the Post-Office Department of cases of proposed compromise of liabilities to the United States, and of the remission of fines, penalties, and forfeitures under the statutes; the keeping and preparation of all correspondence with the Department of Justice relating to prosecutions and suits affecting or arising out of the postal service; and with the consideration of applications for pardon for crimes committed against the postal laws, which may be referred to this Department; with the preparation and submission (with advice) to the Postmaster-General of all appeals to him from the heads of offices of of the Department depending upon questions of law; with the hearing and preparation of cases relating to lotteries and the misuse of the mails in furtherance of schemes to defraud the public; with the examining and, when necessary, drafting all contracts of the Department; and with such other like duties as may from time to time be required by the Postmaster-General.

From the above it will be seen that the duties devolving on the office of the Assistant Attorney-General are multiplex and various. Needless to say, these involve a very large amount of labor, including careful legal research and effort as well as clerical routine; and this shows a substantial increase year by year, correspondingly with the development and expansion of the postal service.

Thus there has been rendered during the fiscal year ended June 30, 1902, a total of 785 official written opinions as compared with 603 such opinions rendered during the preceding year. Of these, 117 were

upon matters of law, involving the interpretation of statutes, contracts, leases, etc., and were mainly addressed to officers of the Post-Office Department proper in response to inquiries received from them; 567 were in the nature of rulings upon the mailability of matter relating to prize schemes, the questions involved in them arising under the act of September 19, 1890, prohibiting the transmission in the mails of matter concerning lotteries and similar chance enterprises; 33 were upon schemes or plans of business of so-called bond-investment companies, and had reference to the question whether these did not embrace the elements of a lottery or fraudulent scheme. These latter were addressed to postmasters, as were also the lottery rulings referred to; both classes of opinions being designed to instruct the postmasters to whom directed as to the proper treatment of mail matter having reference to such concerns or enterprises. The remaining 68 opinions were also given to postmasters, and related to miscellaneous questions arising in the conduct of their respective post-offices, and upon which they desired advice.

In the above statement of the number of official opinions prepared and rendered by the office of the Assistant Attorney-General during the past fiscal year, it is to be observed that no account is taken of the verbal opinions given to officers of the Post-Office Department in response to informal inquiries upon questions of law of lesser importance. These are of daily occurrence, and in the course of a year aggregate a very large number. Frequently they necessitate immediate consideration, and in almost all cases require reference to the statutes, to reports of decided cases, or to text books.

During the year 99 claims for reward for services rendered in connection with the arrest and conviction of post-office burglars, mail robbers, letter-box thieves, etc., have been considered and their allowance or disallowance advised, as compared with 87 such claims passed upon during the preceding year.

Petitions of postal criminals for executive clemency to the number of 65 have been reported upon to the Attorney-General with recommendation as to action thereon, as against 60 such petitions reported upon during the previous fiscal year.

Offers of compromise of indebtedness to the United States to the number of 22, submitted to the Postmaster-General in pursuance of sections 295 and 409 of the Revised Statutes, and referred to this office, have been examined and returned to him with advice as to their acceptance or rejection; being an increase over the last fiscal year in the number of such cases considered of 13.

By the acts of Congress approved May 9, 1888, and June 11, 1896, the Postmaster-General is authorized to reimburse postmasters on account of losses of funds due to "fire, burglary, or other unavoidable casualty" at their respective post-offices, and also for losses of funds in transit from post-offices to their depositaries. The examination and consideration of claims submitted in pursuance of these statutes are, as heretofore stated, assigned to the office of the Assistant Attorney-General. During the past fiscal year there has been a marked increase in the number of such claims submitted and disposed of, as compared with the preceding year. The office records show that during the year ended June 30, 1901, claims of this character to the number of 1,217 were received, and 1,059 settled, while during the fiscal year just closed the number of such claims received was 1,277, and the number settled 1,207.

The aggregate of the losses, claims for which were allowed during the year, is $183,676.46, which is much more than double the total amount allowed the previous year. Of this aggregate, however, $74,610 is on account of funds lost in the burglary of the Chicago post-office, which occurred between midnight of Saturday, October 19, and the early morning of the following Monday. It seems that on the occasion in question one of the vaults in the temporary structure occupied by the post-office was entered by burglars, who gained access thereto by drilling holes through the bottom of the vault and removing a piece of the flooring of sufficient size to admit one of their number, who took therefrom postage stamps in the amount stated. The postmaster at Chicago was reimbursed for this loss under authority of a special act of Congress; the general statutes in force authorizing allowances in such cases extending only to losses not exceeding $10,000. But, exclusive of this claim, the increase in the amount of claims allowed over that for the previous year is $28,409.26.

Appended to this report will be found a detailed statement, in tabular form, of the work of the division of this office charged with the consideration of the claims of postmasters arising under the acts of Congress to which reference is herein made.

Quite the most difficult and responsible of the functions of the Assistant Attorney-General arises under the act of September 19, 1890, amendatory of sections 3894, 3929, and 4041 of the Revised Statutes. This act empowers the Postmaster-General, upon evidence satisfactory to him that the mails are being used in the operation of a lottery or similar enterprise contemplating the distribution of prizes dependent upon chance, or of a scheme or device to defraud, to direct the postmaster at any post-office at which registered letters may arrive addressed to the concern or person found to be operating such scheme, to return such letters marked "fraudulent" to the writers thereof where known, and where the writers are unknown to forward such letters to the Dead-Letter Office. The statute also provides for the withholding from payment of money orders drawn in favor of such concern or person and the repayment of the amount expressed therein to the remitters; and by the act of March 2, 1895, the provisions of the act of September 19, 1890, relating to registered matter, are extended to ordinary letters.

Naturally the duty of examining and weighing the evidence gathered by post-office inspectors or submitted by citizens in cases arising under these statutes has been assigned to the law office of the Post-Office Department. The authority given to the Postmaster-General by these statutes is broad and discretionary, and it has been held that the action taken by him under them is not reviewable by the courts. Realizing to the fullest the responsibility thus imposed and the injustice which might result from hurried or ill-considered use of this authority, the greatest care is exercised in all such cases. According to the established custom, which is very rarely departed from, in cases in which the evidence submitted indicates prima facie that the mails are being used improperly and in violation of these statutes, the party charged with such violation is summoned to appear here and make such answer or defense to the charges preferred or such explanation concerning them as he may desire to offer. After full hearing a brief of the evidence submitted for and against the accused and of the conclusion reached by the Assistant Attorney-General, is forwarded to the

Postmaster-General, by whom final action is taken. This consists either in the issuance of what is known as a "fraud order" against the person or concern in question—the nature and effect of which have been previously explained herein—or a dismissal of the charges.

In some cases the notice to appear is ignored, and in such, action is taken in the absence of the party accused; but in most instances the parties summoned do appear and vigorously contest the action proposed by the Department. Frequently these hearings cover a period of several days, and some of them have been of as much as two weeks' duration. During the fiscal year last past 163 calls were issued to persons or concerns to appear at this office and make answer to charges that they were using the mails in the operation of fraudulent schemes or lottery enterprises. Pursuant to these calls there were 92 hearings, while most of the other parties upon whom notice was served submitted their answers in the form of briefs. Fraud orders to the number of 247 have been issued by the Postmaster-General, of which 63 were directed against the promoters of fraudulent schemes; 19 against foreign and 10 against domestic lotteries, and 155 against what are known as "bond investment" and "debenture" companies, and which were found to be carrying on, by means of the postal establishment, plans or schemes involving fraudulent or lottery features, or both. The seeming discrepancy between the number of persons and concerns called upon to show cause why fraud orders should not issue against them and the number of such orders issued is fully explained by the statement that a number of bond investment companies and concerns of similar character, whose schemes were ascertained to be fraudulent or to embrace the lottery principle, were discovered to have branches or agencies in various cities, and it was therefore necessary to direct an order to the postmaster in each of such cities, in order effectually to suppress their operations through the mails.

Of the whole number of fraud orders so issued nine have been revoked for the reason that the object of their issuance was accomplished and that mail was no longer coming to the addresses named therein.

Additional to the cases arising under the act of September 19, 1890, and the supplemental act of March 2, 1895, disposed of as above stated, a very large number of such cases, investigated and reported upon by post-office inspectors and referred to this office, are found not to establish prima facie the facts alleged by the complainants. These, after careful review, are returned to the division of inspectors with advice either that they be further investigated with the purpose of obtaining additional evidence or that they be closed. The number of cases thus handled can not be given, though undoubtedly they run far into the hundreds.

These statutes are of incalculable value in preserving the integrity of the mails, and afford to the public in its use of this medium a protection against loss by fraud that could probably be secured in no other way. After an experience of over twelve years of their practical operation and effect, the wisdom, and even necessity, of their enactment seems beyond question. By the exercise of their authority fraudulent schemes and practices, as well as lotteries and similar chance enterprises, carried on through the use of the mails, have been reduced to the minimum. It is the constant and earnest aim to apply and enforce them fairly, and with moderation and careful regard for the rights of

individuals; and it is safe to say that the instances of erroneous findings, resulting in injustice to the accused, have been most rare.

But notwithstanding the substantial public good that has undoubtedly been accomplished by means of these statutes, and the exceeding unlikelihood that they will ever be applied in other than a proper and conservative way, they are, in my judgment, deficient in one important respect. It has become in my mind a grave question whether any executive officer should be burdened with the responsibility of exercising a power so arbitrary, and involving consequences so serious to citizens, without some provision being made for a review of his action by a judicial tribunal. In their administration, cases frequently arise involving questions which are close and difficult to determine, and the feeling that in such the decision of the Postmaster-General was open to review by a court of the United States would be a source of much relief to him and to the Assistant Attorney-General acting under him. The decisions of the courts in those cases in which appeals were taken would, moreover, afford to those officers judicial interpretations of these statutes, which would be highly useful to them in dealing with similar cases.

It is obviously impossible for the Postmaster-General, who is the responsible officer under the laws in question, to examine these cases in detail, and he must, therefore, very largely rest his decision upon the recommendation of the Assistant Attorney-General. Thus, in most cases, the recommendation of the latter officer is conclusive of the matter.

Of course, it is to be assumed that the authority lodged in the Postmaster-General by these acts of Congress will never, in any case, be intentionally misapplied or abused. But universal experience has shown that even the most wise and just judges may and do occasionally err; and provision is therefore made by all enlightened governments under which convicted persons and unsuccessful litigants may appeal their causes from courts of primary or original to others of superior or appellate jurisdiction, where the errors of the lower court in respect of the matter, if any there have been, may be corrected, and exact justice done. And if judges and courts of law, with all their elaborate machinery devised for the ascertainment of the truth, are liable to erroneous decisions, how much greater is the likelihood that an executive or advisory officer, charged with a variety of other and exacting functions, and with imperfect means of discovering the facts, may reach mistaken conclusions in intricate cases?

It is to be remembered that no authority is conferred upon the Postmaster-General in the consideration of cases of this character to compel the attendance of witnesses or the production of papers. To these, it seems to me, accused persons or concerns are of right entitled; and besides, they are highly important in many instances in ascertaining the truth or falsity of the allegations made against them.

It is my belief, founded in an experience in the administration of these statutes covering a number of years, that provision should be made by law for summary appeal from the action of the Postmaster-General in issuing fraud orders or refusing to admit matter to the mails under their authority, either to the supreme court of the District of Columbia or the circuit court of the United States within the jurisdiction of which the appellant resides. It is thought that it would not be necessary to provide for the carrying of such appeals beyond the

United States circuit court of appeals; though final appeal should lie to this court for the purpose of maintaining a uniformity of the decisions. The law should further provide for a speedy hearing of such appeals.

The Postmaster-General should also have the power to certify to the supreme court of the District of Columbia, or to any circuit court of the United States, any case depending upon these statutes, for decision; for this would be frequently desirable.

It should be further provided that in the hearing of such appeals the court shall not be confined to the ordinary rules of legal evidence, but may receive and consider any facts, evidence or arguments that may in its judgment be of advantage to it in reaching a decision in the matter.

Later on, and after more mature reflection upon this subject, I may deem it wise to prepare a bill embodying provisions of the character herein suggested, and place the same before you for your consideration, with the recommendation that if the same shall meet with your approval, it be transmitted to Congress with a request for its enactment into law. Such a bill should be drawn with great care and deliberation, lest it defeat the original purpose of the lottery and fraud statutes, and so as not to involve protracted and unsatisfactory litigation. I believe that it could be so drawn as to accomplish the desired purposes without being open to those objections; and I hereby reserve the right to draft such a bill hereafter and present it to you for your consideration.

It seems to me that an enactment embodying the features above suggested would fully safeguard the privilege of the citizen to use the mails in a proper and legitimate way, while continuing in the Postmaster-General the authority to exclude from the mails fraudulent matter and matter relating to lottery enterprises.

The drafting of contracts, the examination of contracts, leases, etc., and the general correspondence of the office, which of necessity is quite voluminous, go to make up the sum total of its work. The nature of these of course is such that it would be impracticable to keep an accurate record of their number or volume, as the case might be, even if that were desirable.

In several previous annual reports of this office the recommendation has been made that a sum be appropriated by Congress sufficient for the publication of the opinions of the Assistant Attorneys-General for the Post-Office Department. The office was created by the act of June 8, 1872, and during the period that has since intervened opinions have been rendered on a vast variety of questions and subjects connected with postal administration. These opinions, however, are strewn through an enormous collection of letter books, and although they would be highly valuable for purposes of reference and as establishing precedents, in the consideration of similar matters, they are practically inaccessible. The desirability of editing and publishing these ought to be self-evident. In printed form they would prove of inestimable value, not only to the Department itself, but also to attorneys and others on the outside who have frequent occasion to ascertain the established precedents in various matters of administrative policy and practice, and which are only to be found in these opinions. Cases are constantly arising which embrace questions that have been previously examined and passed upon in the form of written opinions,

but those opinions are almost as useless, even to the office itself, as if the subjects to which they relate had never been under consideration. There is no reason why the importance of this matter should not be recognized and proper provision made therefor. Knowing, however, that these general views when incorporated in a report of this kind have but little effect, except to call the attention of departmental officials to them, I will probably hereafter take up the subject in more specific form, and consult you as to the propriety of bringing it closely to the attention of the proper committees of the two Houses of Congress.

Very respectfully,

JAS. N. TYNER,
Assistant Attorney-General for the Post-Office Department.

The POSTMASTER-GENERAL.

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REPORT OF THE FIRST ASSISTANT POSTMASTER-GENERAL.

POST-OFFICE DEPARTMENT,
FIRST ASSISTANT POSTMASTER-GENERAL,
Washington, D. C., November 10, 1902.

SIR: The annual report of the Bureau for the fiscal year ending June 30, 1902, is hereby submitted.

I wish to call attention to a request heretofore made for an authorization which will permit the Department to make allowances for clerk hire at third-class post-offices when it is satisfactorily shown that the postmaster by devoting his time and attention to the office is unable to transact the post-office business. I have become convinced that legislation granting this authority to the Department is essential. It is unjust to compel a postmaster to pay a large part of his salary for necessary clerk hire.

The advisability of erecting public buildings for the establishment of branch post-offices in cities is treated in this report. The establishment and extension of the pneumatic-tube service will make it necessary to secure permanent sites for stations in the large cities. The erection of such buildings will no doubt be an economy to the Department.

The equalization of the salaries of clerks in first and second class post-offices, and the reduction of the hours of labor, have carefully been considered. Promotion has been given to low-salaried clerks who have proved by a year's service that they are efficient and capable. At the larger first-class offices clerks are not now working in excess of eight hours a day. Their hours of labor are not limited by statute, but it is sought to make the working hours of the clerks the same as those of carriers by the appointment of additional clerks and the introduction of better methods and schedules.

The appropriation for clerk hire recommended in this report will enable the Department to promote deserving clerks of the lower grades after one year's service, and will allow practically an eight-hour day in all the higher grade offices.

It is impracticable in existing conditions to give clerks in the smaller offices eight hours' continuous service, but an effort is being made to reduce their hours to a fair basis.

In the city-delivery service a plan is proposed whereby in the larger cities substitute carriers shall receive at least $30 a month and in smaller cities $25 a month. This would insure to the substitute carriers a fixed income, something they can not now count upon.

In relation to the special-messenger service, recently transferred to the control of this bureau, recommendations are made in respect to the compensation of these public servants and their classification which, if favorably acted upon, I believe would improve the system.

Authority is asked to charter for a period of ten years (six years beyond the limit fixed by law) a small, swift steamer, constructed with special reference to handling mails to and from the Great Lake steamers while passing at full speed. This service, inaugurated several years ago from Detroit, at first with rowboats and subsequently extended by the chartering of a steamer, has grown in efficiency and appreciation until it has become an almost indispensable feature of lake navigation. Its further development can greatly be aided by granting the authority requested.

The rural free-delivery system has become a permanent feature of the postal service. Five years' experience has demonstrated this. Under an Executive order the clerks therein have been placed on the same footing as the employees in other branches of the civil government. The service has increased the postal receipts and improved conditions wherever it has been put in operation. The educational and other benefits derived therefrom are inestimable.

No deficiency will be created by this service. It remains with Congress to say whether we shall hasten the establishment of routes already laid out, and also expedite the installation of routes in course of investigation. Additional appropriations made for this purpose will thus be applied.

It is the intention to assign the special agents and route inspectors on the work of rearranging and improving the routes already established in case Congress gives no specific instructions to the contrary.

For the better development and more efficient supervision of the rural service changes are recommended in the force and compensation of division superintendents and inspectors, which meet my approval.

It is recommended that Congress make provision for a leave of absence, with full pay, for rural carriers, not to exceed fifteen days in a fiscal year.

Extension to rural carriers of power to receive and register letters has proved so acceptable a public benefit that it is purposed further to increase their usefulness by adding, under proper regulations, an extension of the money-order system to rural routes. Rural carriers are now empowered to receipt for money orders. It is intended, after the 1st of January next, to empower them also to pay money orders at the residences of known patrons of the routes.

Taking into consideration the success of the system and carefully considering its necessities in the future, it is thought that the recommendation for $12,655,800 in the estimates—an increase of little more than five millions over the ensuing fiscal year—for the conduct of the Rural Free Delivery Service for the fiscal year ending June 30, 1904, is reasonable.

For several years past my predecessors have called attention to the necessity of a permanent building for the Division of Post-Office Supplies. The reasons for such a building have fully been set forth in previous reports of this Bureau.

The maximum fee for a money order ($100) is 30 cents. It is well to renew the recommendation for legislation to authorize the reduction of fees so that the maximum fee shall be 25 cents. This would enable the Department to reduce the fees on all orders for $50 or more, which fees range from 18 to 30 cents. These amounts are inconvenient, are not made use of by banks in fees for exchange, and are unsatisfactory to the public. The reduction would not materially affect the revenues.

DIVISION OF SALARIES AND ALLOWANCES.

The following statement summarizes the work of the division for the fiscal year ended June 30, 1902:

Items.		Amount.
Allowances for clerk hire made first and second class offices		$2,440,100.00
Allowances for clerk hire continued from last year		12,588,800.00
Allowances for separating clerk hire made third and fourth class offices		169,615.00
Allowances for separating clerk hire continued from last year		930,602.00
Total annual allowances for clerk hire		16,129,117.00
Allowances for clerk hire reduced and discontinued	$231,100.00	
Allowances for separating clerk hire reduced and discontinued	60,016.00	
		291,116.00
Total annual allowances for clerk hire at first, second, third, and fourth class offices June 30, 1902		15,838,001.00
Allowances for temporary clerk hire		124,670.21
Allowances for substitutes for clerks on vacation		149,469.71
Allowances for assistant postmasters		1,639,200.00
Allowances for assistant postmasters reduced and discontinued		40,200.00
Total annual allowances for assistant postmasters		1,599,000.00
Allowances for rent, fuel, and light made first, second, and third class offices		254,063.00
Allowances for rent, fuel, and light continued from last year		2,047,767.00
Total annual allowances for rent, fuel, and light		2,301,830.00
Allowances for rent, fuel, and light reduced and discontinued		40,639.00
Total annual allowances for rent, fuel, and light, June 30, 1902		2,261,191.00
Allowances for miscellaneous items and furniture made first and second class offices		255,589.40
Allowances for canceling machines made first and second class offices		198,322.09
Allowances for advertising made first and second class offices		22,853.66
Allowances for letterpresses and typewriters, Money-Order Service		9,999.31
Post offices and stations in leased buildings	1,559	
Amount involved for rent of leased buildings		1,207,439.00
Rosters of clerks at first and second class offices approved	1,552	
Letters received	152,157	
Letters sent	133,708	

ADJUSTMENT OF SALARIES OF POSTMASTERS AT PRESIDENTIAL POST-OFFICES.

Salaries of postmasters at first, second, and third class (Presidential) post-offices are adjusted annually under the act of Congress approved March 3, 1883. In compliance with this provision, the nineteenth annual adjustment was made on the basis of the gross receipts of the respective offices for the four quarters ended March 31, 1902, to take effect July 1, 1902.

The following tables show the result of the revision:

Statement showing the number of Presidential post-offices (arranged by classes) in each State and the aggregate salaries of postmasters on July 1, 1902.

State or Territory.	First class.		Second class.		Third class.		Total.	
	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.
Alabama	3	$9,900	8	$18,300	38	$54,500	49	$82,700
Alaska					4	6,300	4	6,300
Arizona			4	9,900	16	22,500	20	32,400
Arkansas	1	3,300	9	22,100	45	63,800	55	89,200
California	7	25,700	33	77,400	105	151,300	145	254,400
Colorado	3	11,500	20	45,800	30	44,600	53	101,900
Connecticut	9	29,500	19	46,300	57	86,600	85	162,400
Delaware	1	3,300	1	2,100	13	18,800	15	24,200
District of Columbia	1	6,000			1	1,100	2	7,100
Florida	1	3,300	11	24,900	27	38,400	39	66,600
Georgia	4	13,900	15	34,200	47	67,500	66	115,600
Hawaii	1	3,100	1	2,000	2	2,400	4	7,500
Idaho			5	11,300	21	28,700	26	40,000
Illinois	15	50,700	69	160,600	219	313,200	303	524,500
Indiana	12	39,800	54	125,400	113	159,200	179	324,400
Indian Territory			4	9,200	27	37,900	31	47,100
Iowa	11	35,600	48	108,800	207	293,900	266	438,300
Kansas	4	13,100	30	70,600	118	167,900	152	251,600
Kentucky	4	14,600	15	34,600	55	76,800	74	126,000
Louisiana	2	8,100	6	14,100	30	42,600	38	64,800
Maine	4	13,100	16	36,900	52	75,100	72	125,100
Maryland	1	6,000	8	19,200	25	37,000	34	62,200
Massachusetts	19	64,400	66	155,400	97	143,400	182	363,200
Michigan	11	38,200	53	124,200	156	220,000	220	382,400
Minnesota	4	18,400	19	44,400	133	191,100	156	253,900
Mississippi			10	24,200	48	68,800	58	93,000
Missouri	4	18,600	32	73,800	128	178,600	164	271,000
Montana	2	6,300	7	17,000	22	30,700	31	54,000
Nebraska	3	10,600	12	27,900	106	149,900	121	188,400
Nevada			1	2,400	9	12,900	10	15,300
New Hampshire	2	6,400	16	36,400	35	49,200	53	92,000
New Jersey	15	50,100	45	108,700	66	95,000	126	253,800
New Mexico			4	9,000	10	15,200	14	24,200
New York	26	95,800	111	263,100	248	360,700	385	719,600
North Carolina	4	12,400	11	25,800	52	74,400	67	112,600
North Dakota	1	3,100	6	13,000	35	49,800	42	65,900
Ohio	14	52,100	70	166,800	163	238,200	247	457,100
Oklahoma	1	3,100	9	20,300	27	39,600	37	63,000
Oregon	1	3,600	8	18,300	30	40,600	39	62,500
Pennsylvania	16	57,700	105	249,700	226	330,900	347	638,300
Porto Rico			2	4,900	2	3,000	4	7,900
Rhode Island	3	10,200	5	11,900	15	20,500	23	42,600
South Carolina	2	6,400	5	11,500	31	46,900	38	64,800
South Dakota	1	3,000	9	20,400	48	66,000	58	89,400
Tennessee	4	14,100	7	16,100	49	70,900	60	101,100
Texas	8	26,400	32	73,300	142	204,700	182	304,400
Utah	1	3,500	3	7,400	13	16,600	17	27,500
Vermont	1	3,200	10	24,600	35	53,200	46	81,000
Virginia	4	13,300	15	36,600	50	72,500	69	122,400
Washington	3	10,200	10	22,900	40	56,800	53	89,900
West Virginia	3	9,300	11	25,800	39	55,000	53	90,100
Wisconsin	5	19,100	36	85,000	113	163,600	154	267,700
Wyoming			4	8,800	11	15,200	15	24,000
Total	242	850,000	1,110	2,603,300	3,431	4,924,000	4,783	8,377,300

Statement showing the number of Presidential post-offices (arranged by classes) in each State on July 1, 1902, and aggregrate receipts for four quarters ended March 31, 1902.

State or Territory.	First class.		Second class.		Third class.		Total.	
	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.
Alabama	3	$302,559	8	$109,848	38	$145,292	49	$557,699
Alaska					4	20,310	4	20,310
Arizona			4	70,577	16	58,960	20	129,537
Arkansas	1	102,400	9	176,005	45	163,038	55	441,443
California	7	1,861,188	33	496,800	105	403,041	145	2,761,029
Colorado	3	726,338	20	275,314	30	122,061	53	1,123,713
Connecticut	9	1,081,250	19	327,511	57	241,044	85	1,649,805
Delaware	1	106,072	1	9,534	13	48,953	15	164,559
District of Columbia	1	804,497			1	2,350	2	806,847
Florida	1	104,829	11	156,259	27	100,280	39	361,368
Georgia	4	705,200	15	206,550	47	177,735	66	1,089,485
Hawaii	1	59,265	1	8,156	2	5,001	4	72,422
Idaho			5	65,849	21	70,666	26	136,515
Illinois	15	9,398,231	69	1,004,564	219	823,551	303	11,226,346
Indiana	12	1,277,174	54	753,727	113	403,029	179	2,433,930
Indian Territory			4	48,557	27	93,993	31	142,550
Iowa	11	1,078,146	48	637,139	207	661,435	266	2,376,720
Kansas	4	387,581	30	454,322	118	436,651	152	1,278,554
Kentucky	4	743,532	15	219,570	55	197,869	74	1,160,971
Louisiana	2	583,870	6	83,187	30	113,325	38	780,382
Maine	4	441,229	16	232,769	52	197,235	72	871,233
Maryland	1	1,308,334	8	140,008	25	98,645	34	1,546,987
Massachusetts	19	5,201,467	66	1,019,079	97	391,493	182	6,612,039
Michigan	11	1,756,814	53	785,379	156	561,617	220	3,103,810
Minnesota	4	1,632,194	19	265,718	133	508,106	156	2,406,018
Mississippi			10	187,493	48	186,059	58	373,552
Missouri	4	3,418,602	32	453,344	128	450,353	164	4,322,299
Montana	2	127,315	7	116,348	22	79,517	31	323,180
Nebraska	3	652,938	12	167,853	106	388,499	121	1,209,290
Nevada			1	13,979	9	33,399	10	47,378
New Hampshire	2	136,216	16	225,924	35	125,311	53	487,451
New Jersey	15	1,726,802	45	751,249	66	256,634	126	2,734,685
New Mexico			4	51,610	10	41,539	14	93,149
New York	26	16,480,165	111	1,744,400	248	973,172	385	19,197,737
North Carolina	4	202,050	11	174,168	52	278,613	67	654,831
North Dakota	1	45,814	6	73,699	35	124,602	42	244,115
Ohio	14	4,326,483	70	1,105,381	163	642,833	247	6,074,697
Oklahoma	1	49,321	9	116,360	27	107,691	37	273,372
Oregon	1	249,176	8	98,885	30	104,752	39	452,813
Pennsylvania	16	6,537,784	105	1,670,904	226	895,912	347	9,104,600
Porto Rico			2	38,006	2	8,139	4	46,145
Rhode Island	3	567,888	5	83,745	15	50,732	23	702,365
South Carolina	2	151,176	5	68,398	31	134,512	38	354,086
South Dakota	1	41,260	9	107,775	48	163,815	58	312,850
Tennessee	4	759,454	7	96,689	49	189,658	60	1,045,801
Texas	8	856,576	32	442,330	142	537,482	182	1,836,388
Utah	1	159,525	3	58,272	13	39,762	17	257,559
Vermont	1	70,558	10	187,701	35	150,346	46	408,605
Virginia	4	546,073	15	275,925	50	190,987	69	1,012,985
Washington	3	425,242	10	133,794	40	143,919	53	702,955
West Virginia	3	187,255	11	161,670	39	147,151	53	496,076
Wisconsin	5	1,156,989	36	664,418	113	355,302	154	2,176,709
Wyoming			4	46,080	11	37,766	15	83,846
Total	242	68,536,832	1,110	16,862,822	3,431	12,884,137	4,783	98,283,791

Statement showing the increases in salaries of postmasters on July 1, 1902.

From—	To—	Number.	From—	To—	Number.	From—	To—	Number.
$1,000	$1,100	99	$1,700	$1,900	7	$2,500	$2,600	56
1,000	1,200	26	1,700	2,000	10	2,500	2,700	3
1,000	1,300	10	1,700	2,100	3	2,500	3,000	1
1,000	1,400	2	1,700	2,200	1	2,600	2,700	21
1,000	1,500	1	1,700	2,300	1	2,600	2,800	1
1,100	1,200	169	1,700	2,400	1	2,600	3,100	1
1,100	1,300	33	1,800	1,900	78	2,700	2,800	26
1,100	1,400	8	1,800	2,000	23	2,700	2,900	3
1,100	1,500	1	1,800	2,100	1	2,800	2,900	21
1,200	1,300	137	1,800	2,200	1	2,800	3,000	4
1,200	1,400	42	1,900	2,000	61	2,800	3,100	2
1,200	1,500	9	1,900	2,100	4	2,900	3,000	14
1,200	1,600	1	1,900	2,200	3	2,900	3,100	2
1,300	1,400	159	1,900	2,300	1	3,000	3,100	13
1,300	1,500	25	2,000	2,100	63	3,100	3,200	12
1,300	1,600	3	2,000	2,200	21	3,200	3,300	16
1,400	1,500	177	2,000	2,300	6	3,300	3,400	6
1,400	1,600	16	2,100	2,200	37	3,400	3,500	5
1,400	1,700	2	2,100	2,300	15	3,500	3,600	2
1,500	1,600	139	2,100	2,400	1	3,600	3,700	4
1,500	1,700	14	2,200	2,300	60	3,700	3,800	1
1,500	1,800	4	2,200	2,400	8	3,800	3,900	2
1,600	1,700	143	2,300	2,400	50	4,000	5,000	5
1,600	1,800	13	2,300	2,500	6	5,000	6,000	1
1,600	1,900	2	2,400	2,500	44			
1,700	1,800	104	2,400	2,600	3			

Increases: 1,719 at $100; 269 at $200; 61 at $300; 9 at $400; 5 at $500; 1 at $600; 6 at $1,000; total, 2,070 $256,700.

Statement showing the decreases in salaries of postmasters on July 1, 1902.

From—	To—	Number.	From—	To—	Number.	From—	To—	Number.
$1,100	$1,000	14	$1,700	$1,600	14	$2,400	$2,300	5
1,200	1,100	15	1,700	1,500	1	2,400	2,100	1
1,200	1,000	1	1,800	1,700	8	2,400	2,000	1
1,300	1,200	26	1,800	1,400	1	2,500	2,400	2
1,300	1,100	4	1,900	1,800	5	2,500	2,300	1
1,300	1,000	1	2,000	1,900	1	2,800	2,700	4
1,400	1,300	30	2,100	2,000	2	3,000	2,800	1
1,400	1,200	4	2,200	2,100	12	3,000	2,700	1
1,400	1,100	1	2,200	1,800	1	3,300	3,200	1
1,500	1,400	25	2,300	2,200	10	3,300	3,100	1
1,500	1,300	1	2,300	2,100	1	3,700	3,600	1
1,600	1,500	21	2,300	2,000	1			
1,600	1,400	2	2,300	1,900	1			

Decreases: 196 at $100; 17 at $200; 5 at $300; 4 at $400. Total, 222, $26,100.

Statement showing the number of Presidential post-offices, by classes, July 1, 1902, the aggregate of salaries, and the total gross receipts March 31, 1902.

Class.	Number of offices.	Salaries of postmasters.	Total gross receipts four quarters ended Mar. 31, 1902.
First	242	$850,000	$68,536,832
Second	1,110	2,603,300	16,862,822
Third	3,431	4,924,000	12,884,137
Total	4,783	8,377,300	98,283,791

The following table shows the result of the revision:

First-class post-offices:	
Number June 30, 1902	220
Second class advanced to first class July 1, 1902	24
First class relegated to second class July 1, 1902	2
Number July 1, 1902	242

Second-class post-offices:	
Number June 30, 1902	1,025
First class relegated to second class July 1, 1902	2
Second class relegated to third class July 1, 1902	3
Second class advanced to first class July 1, 1902	24
Third class advanced to second class July 1, 1902	110
Number July 1, 1902	1,110
Third-class post-offices:	
Number June 30, 1902	3,495
Third class relegated to fourth class July 1, 1902	12
Third class advanced to second class July 1, 1902	110
Second class relegated to third class July 1, 1902	3
Fourth class advanced to third class July 1, 1902	55
Number July 1, 1902	3,431
First class July 1, 1902	242
Second class July 1, 1902	1,110
Third class July 1, 1902	3,431
Total Presidential offices July 1, 1902	4,783

Summary of adjustments of salaries of postmasters at Presidential offices July 1, 1901, and July 1, 1902, showing in detail the net increase in the number of post-offices and the salaries of said postmasters

Date.	Number of offices.	Aggregate salaries of postmasters.
July 1, 1901	4,489	$7,836,000
July 1, 1902	4,783	8,377,300
Increase	294	541,300

This increase is shown in detail as follows:

Date.	Number of offices.	Aggregate salaries of postmasters.
Total number of first, second, and third class post-offices whereat increases were made July 1, 1902	2,070	$256,700
New Presidential offices during the fiscal year:		
October 1, 1901	69	74,600
January 1, 1902	152	162,800
April 1, 1902	45	48,200
July 1, 1902	55	59,600
Total	321	345,200
Grand total of increase		601,900
REDUCTIONS.		
Relegated to fourth class July 1, 1902	12	12,400
By reductions at 222 offices July 1, 1902		26,100
By Presidential offices discontinued:		
Orange Valley, N. J., July 2, 1901	1	1,700
West Orange, N. J., July 2, 1901	1	2,200
Winooski, Vt., August 1, 1901	1	1,300
Irvington, N. J., August 1, 1901	1	1,700
Chestnut Hill, Mass., October 1, 1901	1	1,600
Clayton, Mo., December 1, 1901	1	1,000
Kirkwood, Mo., December 1, 1901	1	1,700
Webster Groves, Mo., December 1, 1901	1	1,500
Athol Center, Mass., February 1, 1902	1	1,400
Dunmore, Pa., February 1, 1902	1	1,600
Bennett, Pa., March 1, 1902	1	1,400
Etna, Pa., March 1, 1902	1	1,400
Avondale, Ala., May 1, 1902	1	1,100
Woodlawn, Ala., May 1, 1902	1	1,000
Longbranch City, N. J., June 1, 1902	1	1,500
Total decrease	27	60,600
Net increase during year	294	541,300

The following table shows the result of the annual readjustment of postmasters' salaries for each year since July 1, 1893:

	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Number of Presidential offices on July 1	3,340	3,402	3,491	3,651	3,733	3,821	4,014	4,280	4,489	4,783
Second-class offices advanced to first-class on July 1	14	4	11	11	2	10	17	15	12	24
Third-class offices advanced to second class on July 1	43	26	63	68	33	64	91	110	98	110
Fourth-class offices advanced to third class year ended July 1	207	124	139	192	139	111	215	284	233	321
First-class offices relegated to second class July 1	1	6	1	.....	2	3	.....	1	.....	2
Second-class offices relegated to third class on July 1	12	33	18	12	24	15	6	7	1	3
Third-class offices relegated to fourth class July 1	39	49	39	22	47	17	15	11	7	12
Presidential offices discontinued during year ended July 1	5	13	11	10	10	6	3	8	17	15
Increased salaries at Presidential offices on July 1:										
Number	1,121	694	1,061	1,415	704	1,475	1,709	1,914	1,771	2,070
Amount	$138,000	$80,200	$133,100	$169,100	$82,100	$185,500	$213,800	$236,100	$210,300	$256,700
Reduced salaries at Presidential offices on July 1:										
Number	284	701	394	250	575	299	211	171	249	222
Amount	$36,600	$87,900	$50,400	$30,000	$65,000	$35,600	$25,200	$22,300	$28,400	$26,100
Average salary of postmasters on July 1	$1,697	$1,681	$1,689	$1,699	$1,688	$1,711	$1,726	$1,734	$1,742	$1,751

This table illustrates the growth of our postal service during the last seven years.

	1895.	1902.
Number of Presidential offices July 1	3,402	4,783
Second-class offices advanced to first class	4	24
Third-class offices advanced to second class	26	110
Fourth-class offices advanced to third class	124	321
First-class offices relegated to second class	6	2
Second-class offices relegated to third class	33	3
Third-class offices relegated to fourth class	49	12
Presidential offices discontinued	13	15
Increased salaries, Presidential offices	$80,200	$256,700
Number of above offices	694	2,070
Reduced salaries, Presidential offices	$87,900	$26,100
Number of above offices	701	222
Average salary of postmasters July 1	$1,681	$1,751

During the past seven years the number of Presidential offices has increased from 3,402 to 4,783; second-class offices advanced to first class, 24, in 1902, as against 4 in 1895; third-class offices advanced to second class, 110, in 1902, as against 26 in 1895; first-class offices relegated to second class in 1895, 6, as against 2 in 1902; second-class offices relegated to third class in 1895, 33, in 1902, 3; third-class offices relegated to fourth class in 1895, 49, and in 1902, 12.

These figures show that there is a steady and unprecedented growth in the postal service.

IRREGULAR SALES OF POSTAGE STAMPS AND STAMPED PAPER.

The Department has always endeavored to secure postmasters whose friends would not sacrifice the public interest for the postmasters' private gain, and whose compensation would be regulated by the business that properly belonged to their offices. Many violations of this rule have been followed by the removal of the offending postmasters, but there is ample evidence at hand to demonstrate that quite a number of postmasters (particularly those at post-offices contiguous to great business and commercial centers) are actively engaged in the irregular sale of postage stamps. Many of these postmasters enjoy liberal salaries and clerk hire and miscellaneous allowances, when, as a matter of fact, their post-offices do not actually perform the amount of service commensurate therewith. Some of the larger post-offices are now provided with printing plants, and if the postmasters thereat were required when in receipt of their supplies of postage stamps to imprint or surcharge the same with the name of their post-offices, the stamps would not readily meet with sale elsewhere. It was at first proposed that the stamps should be surcharged or indorsed at the place of manufacture, but objection was then made that it would require too much additional storage capacity at the factory. The plan outlined would entirely overcome the objection made.

ESTIMATES FOR POSTMASTERS' SALARIES.

The estimates, appropriations, and expenditures for salaries of postmasters for the last two fiscal years, together with the estimate and appropriation for the current fiscal year, are shown by the following table:

Year.	Estimate.	Appropriation.	Expenditure.
1900–1901	$17,000,000	$18,000,000	$19,949,515
1901–2	18,000,000	20,000,000	20,783,920
1902–3	20,000,000	21,000,000	.....

It is recommended that an appropriation of $21,500,000 be requested to cover compensation to postmasters for the fiscal year ending June 30, 1904, and that (as provided in last year's appropriation) any portion thereof saved by consolidation of post-offices under the law be made available for the payment of salaries of superintendents and clerks at stations established in lieu of the post-offices thus discontinued.

For compensation to assistant postmasters at first and second class post-offices:

Present.			Proposed.		
Number.	Salary.	Amount.	Number.	Salary.	Amount.
1	$3,500	$3,500	1	$4,000	$4,000
17	3,000	51,000	17	3,000	51,000
2	2,500	5,000	6	2,500	15,000
4	2,000	8,000	4	2,000	8,000
10	1,900	19,000	14	1,900	26,600
20	1,800	36,000	20	1,800	36,000
30	1,700	51,000	35	1,700	59,500
75	1,600	120,000	85	1,600	136,000
80	1,500	120,000	100	1,500	150,000
70	1,400	98,000	80	1,400	112,000
130	1,300	169,000	150	1,300	195,000
270	1,200	324,000	300	1,200	360,000
270	1,100	297,000	310	1,100	341,000
400	1,000	400,000	400	1,000	400,000
1,379	.....	1,701,500	1,516	.....	1,894,100

CLERKS AT FIRST AND SECOND CLASS POST-OFFICES.

On July 1, last, every known capable and energetic clerk receiving a salary of $300, $400, $500, $600, $700, $800, and $900, who had been one year in the postal service or in these grades for a similar period, received a substantial increase in his salary ($100 being the minimum), as follows:

Clerks.	Receiving—	Advanced to—
117	$300	$400
443	400	500
1,016	500	600
2,200	600	700
1,750	700	800
2,100	800	900
1,700	900	1,000
1,300	1,000	1,100
144	1,100	1,200
198	1,200	1,300
176	1,300	1,400
11,144	.....	.....

Thus, out of about 12,000 promotions made by the Department to date, more than 11,000 clerks were promoted in the lower grades, as above shown.

The postal service at this writing, it can be asserted, is on a most substantial basis; the clerks are willing and efficient, and the mails are better and more intelligently handled than ever. In the larger first-class post-offices the clerks are not working in excess of eight hours, and in New York and Chicago, where for some years past more or less congestion had existed, the mails are being dispatched earlier by several hours than heretofore.

With the continued growth of business, however, it will be impossible, to maintain these conditions without a substantial increase in the appropriation, and it is therefore recommended that an appropriation of $18,101,900 for clerk hire at first and second class post-offices be requested.

This is an increase of $1,412,100 over the present appropriation, and provides for 2,285 additional clerks. The changes proposed are shown as follows:

Grades.	Present number.	Amount.	Proposed number.	Amount.
$100	1,300	$130,000	1,000	$100,000
200	350	70,000	350	70,000
300	250	75,000	250	75,000
400	100	40,000	200	80,000
500	2,120	1,060,000	800	400,000
600	3,200	1,920,000	4,200	2,520,000
700	1,000	700,000	2,300	1,610,000
800	3,900	3,120,000	4,000	3,200,000
900	1,900	1,710,000	2,500	2,250,000
1,000	2,100	2,100,000	2,300	2,300,000
1,100	1,100	1,210,000	1,500	1,650,000
1,200	1,400	1,680,000	1,400	1,680,000
1,300	300	390,000	400	520,000
1,400	250	350,000	350	490,000
1,500	110	165,000	110	165,000
1,600	110	176,000	110	176,000
1,700	125	212,500	125	212,500
1,800	80	144,000	60	108,000
2,000	75	150,000	80	160,000
2,100	7	14,700	16	33,600
2,200	30	66,000	30	66,000
2,400	25	60,000	25	60,000
2,500	10	25,000	10	25,000
2,600	25	65,000	30	78,000
2,700	14	37,800	20	54,000
3,000	2	6,000	2	6,000
3,200	4	12,800	4	12,800
Total	19,887	15,689,800	22,172	18,101,900

CLERKS AT FIRST AND SECOND CLASS POST-OFFICES.

Allowances for clerks in post-offices of the first and second classes and stations connected therewith.

Year.	Estimate.	Appropriation.			Expenditure.		
		Amount.	Increase.	Per cent of increase.	Amount.	Increase.	Per cent of increase.
1893–94	$8,860,000	$8,810,000	$450,000	5.38	$8,736,011	$394,368	4.73
1894–95	9,700,000	9,700,000	890,000	10.10	9,429,523	693,512	7.94
1895–96	10,100,000	10,100,000	400,000	4.12	9,963,992	534,469	5.77
1896–97	10,500,000	10,400,000	300,000	2.97	10,382,061	418,069	4.20
1897–98	11,000,000	10,600,000	200,000	1.92	10,598,329	216,268	2.08
1898–99	11,300,000	11,100,000	500,000	4.72	11,094,179	495,850	4.68
1899–1900	11,800,000	11,498,000	398,000	3.59	11,496,617	402,438	3.61
1900–1901	11,656,900	11,704,700	206,700	1.79	[a]11,723,514	226,877	1.97
1901–2	13,300,000	13,038,700	1,334,000	11.40	[b]13,048,953	1,325,439	11.36
1902–3	14,878,200	15,689,800	2,651,100	20.33			
Total			7,329,800			4,707,250	
Average			732,980			523,028	

[a] Including $20,665 obtained from postmasters' salaries at post-offices consolidated with other post-offices.

[b] Including $14,449 obtained from postmasters' salaries at post-offices consolidated with other post-offices.

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RURAL FREE-DELIVERY SERVICE.

PERMANENT ORGANIZATION ESTABLISHED.

Under the act making appropriation for the service of the Post-Office Department approved April 21, 1902, and in the legislative, executive, and judicial appropriation bill approved April 29, 1902, a classified force was provided for the rural free-delivery service and the appropriations for that service were segregated instead of being left to be distributed at the discretion of the Postmaster-General as in the previous years.

Under these acts a permanent organization was effected on July 1, 1902, and a superintendent, formerly designated as chief special agent of rural free delivery, was appointed and placed in direct charge of the service, under the direction of the General Superintendent of the Free-Delivery System. A supervisor, whose position is also authorized by law, was given charge of the inspection of the service and assigned to assist the General Superintendent and the superintendent of rural free delivery in the general supervision of the organization.

Division headquarters.—The field work is handled through eight divisions. The number of division headquarters was increased by order of the Postmaster-General July 1, 1902, from four to eight, but as Congress provided for only seven special agents in charge, the eighth, or Pacific division, is under the charge of an assistant superintendent of the city-delivery service as acting special agent in charge of rural free delivery. The United States is divided among these divisions as follows:

Eastern division, with headquarters at New York City, comprising the New England States and New York.

Atlantic division, with headquarters at Philadelphia, comprising Pennsylvania, New Jersey, Delaware, Maryland, and Virginia.

Southern division, with headquarters at Nashville, comprising Ten-

nessee, North Carolina, South Carolina, Georgia, Florida, Alabama, and Mississippi.

Ohio division, with headquarters at Marietta, Ohio, comprising Ohio, West Virginia, and Kentucky.

Middle division, with headquarters at Indianapolis, Ind., comprising Indiana, Michigan, Illinois, and Wisconsin.

Missouri division, with headquarters at St. Louis, comprising Missouri, Kansas, Arkansas, Texas, Louisiana, and Indian and Oklahoma Territories.

Western division, with headquarters at Denver, comprising Iowa, Minnesota, Nebraska, North Dakota, South Dakota, New Mexico, Colorado, Wyoming, and Montana.

Pacific division, with headquarters at San Francisco, in charge of assistant superintendent free-delivery service, comprising California, Oregon, Washington, Idaho, Nevada, Utah, and Arizona.

Congress is asked to increase the number of divisions to ten, which was the number recommended last year. This extended subdivision will enable the work of investigating and establishing service, and the still more important work of extending, rearranging, and adjusting service previously established so as to adapt it to changing conditions, to be more widely distributed and more closely scrutinized.

It is also proposed to change the designation of special agent in charge to division superintendent.

GENERAL EXTENSION OF SERVICE.

No more forcible demonstration of the wonderfully rapid growth of rural free delivery is to be found than that contained in the following statement, which shows the appropriation for and the routes established during each year since the beginning of the experiment:

Fiscal year.	Appropriation.	Routes in operation.
1897	$40,000	44
1898	50,000	148
1899	150,000	391
1900	450,000	1,276
1901	1,750,000	4,301
1902	3,993,740	8,466

Since July 1 the number of routes has been increased to 11,650, so that on November 1 the carriers will travel daily 275,000 miles of country roads to serve about seven millions of the strictly rural population of the United States. The area covered by these routes is fully 300,000 square miles. This area is nearly equal to that of Great Britain and France, and is more than equal to the area of the New England States, New York, New Jersey, Delaware, Maryland, Pennsylvania, Ohio, Indiana, and West Virgina. There is no reason to expect a decrease in the popular demand for rural free delivery for several years to come—not, in fact, until all available sections of the country have been covered by the service.

Extension of county service.—The most important feature in the development of rural free delivery during the past year has been the evolution of the county service by adjusting old routes so that they shall dovetail in with new ones and supply connecting links to cover the entire county with a network of rural free delivery, practically

displacing all other service except such as is needed to supply the few distributing offices retained.

Two classes of county service.—The county services ordered established during the past fiscal year have been of two classes:

One, by order of the Postmaster-General, directing that on a specified date, or as near thereafter as practicable, rural free delivery shall be established over a designated county. In this work a special but limited force of experienced agents has been employed and has been transferred from State to State under directions of the general office without regard to division assignment.

In the other class of county services existing routes have been rearranged and additional routes recommended, so as to cover the whole territory without any formal order to that effect. Whenever this has been found practicable, and has been carried out, the outcome has been such as to commend this feature to general adoption.

County services that have evolved themselves.—From among the county services which, during the past year, have practically established themselves on the principle of natural selection and by the aid of intelligent supervision on the part of the special agent in charge and conscientious and painstaking investigations by special agents in the field a few examples are selected.

In the western division, in Dubuque County, Iowa, the service entirely covers one of the most populous counties, where seven routes only were in operation before the establishment of full county service was taken up. Forty routes now cover an area of 738 square miles, furnishing daily service to 15,000 people on the various routes established. More than 2,000 daily papers have been subscribed for as the result of the establishment of this service, which starts from 15 post-offices. As a result of its inauguration 16 post-offices, 10 star routes, and 1 messenger service have been discontinued. The cost of this superseded service is saved to the Post-Office Department in its general account, but can not be credited on the Auditor's books to rural free delivery.

The counties of Des Moines, Buchanan, and Blackhawk, also in Iowa, have been entirely covered by this system. In each of these counties partial service had been in previous operation.

In the readjustment of existing routes and establishment of routes in Delaware County, Iowa, 24 carriers serve the county over an aggregate length of route of 567 miles, meeting the wants of 10,000 people living along the routes.

In Minnesota, in Washington County, service has been in operation since September 15, 1902, and Hennepin County is practically covered. Two county services have been established in Kansas, in Sumner and McPherson counties; and one in Nebraska, in Cass County. Saline County, Nebr., will shortly be entirely served by action on pending petitions.

In the eastern division five counties in New York State have been completely covered during the past year by the gradual installation of county service.

These include Monroe County, N. Y., with a total of 45 routes from 27 distributing points, 15 of these routes being new; Genesee County, N. Y., with a total of 37 routes from 19 starting points, embracing 3 new routes; Tompkins County, N. Y., with 29 routes from 10 starting

points, 11 of which were new, and Yates County, N. Y., with 28 routes from 9 starting points, embracing only 1 new route.

By installing service, as petitioned for from time to time, Wayne County, N. Y., has also been completely covered.

In New Hampshire and Vermont there are counties susceptible of like treatment.

In Connecticut, in Fairfield County, complete service has been in operation for two years.

In the Atlantic division, Butler County, Pa., has been covered by 80 carriers; Rockingham County, Va. (a service not yet fully tested), has 37 carriers, and it is anticipated that when the post-offices and star routes which are rendered unnecessary have been supplanted by rural delivery, good results will be obtained. Frederick County, Md., has been covered in continuation of the Carroll County service with marked success, and Washington County, in the same State, is about to be given a full service, with 34 carriers.

In the middle division, in Illinois, Edgar and Peoria counties, each with 33 carriers, have had a gradual county service established. Reports are under consideration for establishing similar services in Will and Champaign counties in the same State. Bartholomew, Delaware, Madison, Marion, Gibson, Posey, and Grant counties, Indiana, have been reached in like manner, the existing service being supplemented by additional routes so as to practically supply each county.

In the Missouri division, Jackson County, Mo., was included in the rural free-delivery county services on the 1st of February last by adding routes to those previously established.

In the Ohio division, Jefferson County, Ky., was inaugurated as a county service August 15, 1902, with 20 carriers; and Muskingum County, Ohio, will shortly be equipped with a county service of 61 carriers.

Santa Clara County, Cal., in the Pacific division, was fully covered by 26 carriers, whose duties commenced July 1, 1902. The routes laid out took up and linked together all routes previously established.

In the southern division several successful county services have been started by the process of merging routes existing with those petitioned for. This has notably been the case in Washington and Davidson counties, Tenn.

It is estimated that fully 200 counties, mostly in the Middle West, have a sufficient number of routes in operation to make the completion of service only a question of laying out a few more routes, possibly not more than 10 to the county. It is the purpose of the Department to carry out this plan of extension as rapidly as possible, and with that object in view the necessary maps are being prepared for the use of the agents who will be assigned to the work.

The following list enumerates the counties in which complete rural service is in operation or about to be established, also counties where orders have been issued for preliminary investigation for county service:

County.	State.	Established.
Anderson	South Carolina	Oct. 1, 1901
Bartholomew	Indiana	Nov. 15, 1902
Buchanan	Iowa	July 15, 1902
Butler	Pennsylvania	Aug. 15, 1902
Carroll	Maryland	Dec. 20, 1899
Cass	Nebraska	Oct. 15, 1902
*Champaign	Illinois	
Chautauqua	New York	Sept. 15, 1902
Cobb	Georgia	Nov. 15, 1902
Dane	Wisconsin	July 15, 1902
Davidson	Tennessee	July 1, 1902
Daviess	Indiana	Dec. 1, 1902
Delaware	do	Oct. 15, 1901
Do	Iowa	July 1, 1902
Des Moines	do	Do.
Dubuque	do	Nov. 15, 1902
Edgar	Illinois	May 1, 1902
Erie	New York	Jan. 15, 1902
Fairfield	Connecticut	Dec. 15, 1900
Frederick	Maryland	Nov. 15, 1901
*Fulton	Ohio	
Gibson	Indiana	July 15, 1902
Grant	do	Aug. 15, 1902
Hamilton	do	Oct. 15, 1902
Hardin	Iowa	Nov. 15, 1901
*Henry	Tennessee	
Iroquois	Illinois	Dec. 1, 1902
Jackson	Missouri	Feb. 1, 1902
Jefferson	Alabama	Nov. 15, 1901
*Jefferson	Indiana	
Jefferson	Kentucky	Aug. 15, 1902
Kankakee	Illinois	Sept. 1, 1902
*Knox	do	
Kent	Delaware	Apr. 1, 1902
*Kosciusko	Indiana	
*Lasalle	Illinois	
*McLean	do	
Madison	Indiana	Feb. 15, 1902
Marion	do	Do.
*Marshall	do	
*Maury	Tennessee	
*Milwaukee	Wisconsin	
Monroe	New York	Nov. 1, 1902
*Muskingum	Ohio	Nov. 15, 1902
Newton	Georgia	Apr. 15, 1902
*Noble	Indiana	Dec. 1, 1902
Niagara	New York	Nov. 15, 1901
Ontario	do	July 1, 1902
*Outagamie	Wisconsin	
Peoria	Illinois	Sept. 15, 1902
Posey	Indiana	July 15, 1902
Rockingham	Virginia	Oct. 15, 1902
Santa Clara	California	July 1, 1902
*Sheboygan	Wisconsin	
*Summit	Ohio	
Sumner	Kansas	July 15, 1902
Tippecanoe	Indiana	Oct. 15, 1902
*Van Buren	Iowa	
Vermilion	Illinois	Aug. 1, 1902
Washington	Maryland	
Washington	Minnesota	Sept. 15, 1902
Do	Pennsylvania	Oct. 15, 1900
Do	Tennessee	Dec. 1, 1900
*Waukesha	Wisconsin	
Wayne	New York	July 1, 1902
*Will	Illinois	
*Winnebago	Wisconsin	
Yates	New York	Do.

*Service about to be established.

INCREASE OF MAIL HANDLED.

The continued marked increase from month to month and year to year in the number of pieces of mail handled by rural carriers is not only proof that the people were prompt to take advantage of improved

mail facilities brought to them by rural free delivery when it was first established, but also conclusive evidence that the use of these facilities increases rapidly as their benefits become more generally felt by the residents of rural districts. When the first experiments of rural delivery were installed the phenomenal increase in the volume of rural mail was attributed generally to the newness and novelty of the service, and its opponents confidently predicted that these wonderful increases would disappear as the service became settled. After two or three years, however, it is found that the initial ratio of increase has not only been maintained, but in many instances raised. This leads to the conviction that with the completion of a universal rural service the volume of mail will have reached such proportions as to insure sufficient additional revenue to support the service. The results obtained in the rural free-delivery system of Carroll County, Md., strongly support this claim.

Carroll County statistics.—Carroll County is referred to and its reports considered because it was the first county in the United States in which rural free delivery as a complete system was established. It is, strictly speaking, an agricultural county, 75 per cent of the population (33,000) residing outside the small cities and villages, the largest of which is Westminster, the county seat, with a population of about 3,200. It is the only county delivery service old enough to provide a comparison between the reports of two fiscal years. A detailed statistical report of the mail transactions in this county for two years is found in the appendix, Table A, page 64.

The figures contained in this statement are both interesting and instructive. They present a striking example of the results invariably produced by the extension or expansion of public utilities and the application of improved methods. The number of letters delivered in Carroll County during 1902 increased almost 16 per cent over the number delivered during 1901. Postal cards delivered show an increase of about 21 per cent; newspapers and periodicals, 9 per cent; circulars, 120 per cent; packages, a little less than 35 per cent, and registered letters delivered, 23½ per cent. The phenomenally large increase in the number of circulars delivered is most significant as an evidence that rural free delivery is attracting the advertising business public as a medium through which to reach a new field of trade.

It is true the report shows that newspapers and periodicals make up more than one-half of the volume of mail delivered. Yet the rate of increase in the number of pieces of this class of mail is but 9 per cent. This comparatively small showing may be explained by the fact that at the time rural free delivery was established in Carroll County three years ago the subscriptions for daily papers were so general that since that time there has been only a natural or gradual increase in the circulation of newspapers and periodicals.

An increase of 21 per cent in the total number of pieces of all classes of mail delivered during the year, a record equal to that maintained in large cities, tells of the steady stream of mail pouring into the county from outside sources. It is apparent, then, that rural free delivery not only stimulates the use of the mail service in the locality in which it is directly operated, but also throughout the country, especially in the neighboring large cities, whose merchants and others are quick to take advantage of the opportunity afforded them to reach the country resident with their advertising matter and catalogues.

One of the most interesting features of the results obtained in Carroll County is found in the amount of mail collected and the number of applications for money orders received by carriers en route. It shows how liberally the farmers of Carroll County have patronized a service whose introduction less than three years ago was bitterly opposed by many as a step backward in the postal service. During the year 50 carriers collected 496,742 letters, an increase of 14.2 per cent over the number collected the year before. About the same rate of increase was maintained in the number of postal cards collected, while the number of newspapers and periodicals gathered en route shows an increase of 1½ per cent. This very small increase simply points out the fact that the farmer resident seldom has occasion to mail newspapers.

The wonderful showing made in the number of circulars collected—157 per cent over the number collected in 1901—signifies that country merchants have not been slow to use the rural mail service to place their advertising matter in the hands of their country patrons.

The surprising increase in the number of packages delivered and collected in 1902 shows that in spite of the comparatively high rate of postage charged for merchandise or fourth-class matter the people willingly make use of the mail service wherever possible. This record may be advanced as a fair indication of what a parcels post would mean to rural communities operated in connection with or through the medium of rural delivery.

The aggregate number of pieces of mail collected throughout the county reached 725,703, as against 605,886 in 1901, or an increase of about 20 per cent. This is about equal to the rate of increase in the number of pieces of mail delivered during the same period. It is most gratifying to note that such a healthy increase has been maintained in the volume of mail collected. This record is further proof that the great augmentation of mail caused by the introduction of rural delivery is in those classes from which the postal service derives the great bulk of its revenues. Ninety-five per cent of the mail dispatched by the farmers of this county is first-class matter—letters and postal cards. The farmer is the steady and constant user of the 2-cent stamp. If he mails a newspaper, it is not at 1 cent a pound, the rate enjoyed by newspaper publishers, but he must pay 1 cent apiece on the ordinary-size newspaper or on a package of papers at the rate of 4 cents a pound. The country merchant, too, is a profitable customer of the rural free-delivery service, for the circular, or third-class matter, which he sends out (and which in Carroll County increased 157 per cent last year) is at the rate of 1 cent for each piece, which is a profitable rate of postage.

During 1901 the rural letter carriers of Carroll County received applications for 1,776 money orders. During 1902 they supplied their patrons with 2,994 money orders, an increase of 1,228, or 70 per cent. Every money order delivered to a patron on route means a saving of a ride of from 5 to 10 miles for the farmer who purchased it. When one considers the time and trouble that this service thus saves country residents some idea may be formed of the great blessing rural delivery really is to our farming communities.

The reports of other counties which are enjoying a complete delivery service, though for a much shorter period than Carroll County, fully equal the record of this county. It must, then, become clear to the close observer of the growth and operation of rural delivery that as soon as the service has been extended throughout the country it will

not only be found to be self-sustaining, but prove to be a source of revenue to the postal service.

EFFECT OF RURAL FREE DELIVERY ON POSTAL REVENUES.

It has been shown by a statement of the amount of mail handled in Carroll County, Md., that the effect of the rural free-delivery service upon the postal revenues is twofold: First, it causes a healthy and steady increase in the gross receipts of the post-offices in the locality or county in which free delivery is general, and, second, it is responsible for a portion of the increased revenues of the large offices accruing from the stimulated use of the mails by merchants and others who are now able to reach patrons of rural delivery throughout the country.

The first may be accurately ascertained in dollars and cents in those counties in which the service has been established sufficiently long to provide a comparison between the reports of two fiscal years. According to a statement from the books of the auditor's office, the aggregate receipts of all post-offices in Carroll County, Md., for the fiscal year ending June 30, 1901, were $29,245.37, and for the following year ending June 30, 1902, $32,161.04, an increase of $2,915.67, or 10 per cent. This is equal to the average rate of increase for the past three years in the aggregate revenues of the post-offices having city free delivery.

It therefore may fairly be claimed that rural delivery, once universally established, will have the effect of equalizing throughout the whole service the annual rate of increase in the gross postal revenues. A careful analysis of the revenues for the year 1902, which were $121,848,047.26, will emphasize this point. Of this amount, $83,330,812.37 was produced by the 933 city free-delivery offices; the remaining 3,807 Presidential offices produced gross revenues aggregating $17,072,750.13, leaving $19,365,253.01 for the 71,184 fourth-class offices, and $2,078,231.85 from miscellaneous receipts, money-order fees, fines, sale of waste paper, etc. The rate of increase of the postal revenues of these three classes of offices over the revenues of the preceding year was as follows:

	Per cent.
933 free-delivery offices	12.3
Presidential offices, nonfree delivery	5
Fourth-class offices	2.4

When it is considered that the rural free-delivery service is operated principally from the nonfree-delivery Presidential and fourth-class offices, the significance of the rate of increase in Carroll County, Md., namely, 10 per cent, becomes apparent. It is, of course, impossible to accurately estimate what proportion of the increase of revenues in large cities is directly chargeable to the establishment of rural free delivery in districts remote from these offices. That there is such an increase can not be doubted. This is indicated by the phenomenal yearly increase in the amount of mail delivered on rural routes, all of which can not be credited to local use of the mail. Fully 70 per cent of the mail delivered in the county originates outside its limits, and the proceeds of the postage on this portion of the mail helps to make up the revenues of the post-offices from which it is dispatched.

DISCONTINUANCE OF STAR ROUTES AND FOURTH-CLASS POST-OFFICES.

Star routes.—Wherever it is found to be feasible for rural service to supersede star-route service, star-route contracts are abrogated.

Between November 1, 1901, and October 31, 1902, 1,668 star routes were discontinued on this account, the contracts from which amounted to $275,469.95 per annum. The following statement shows the number of routes discontinued in each State and the aggregate amount paid contractors:

State.	Number of routes.	Compensation.	State.	Number of routes.	Compensation.
Alabama	15	$1,578.25	New York	119	$28,763.88
California	7	1,429.59	North Carolina	77	8,017.71
Connecticut	11	2,314.75	North Dakota	1	211.34
Delaware	23	4,834.25	Ohio	115	16,231.50
Florida	2	185.00	Oklahoma	1	108.00
Georgia	91	9,900.12	Oregon	1	156.00
Illinois	92	13,669.81	Pennsylvania	77	17,896.91
Indiana	115	17,396.48	Rhode Island	2	132.00
Iowa	97	17,699.24	South Carolina	38	5,110.80
Kansas	48	9,276.27	South Dakota	5	1,662.53
Louisiana	1	96.00	Tennessee	103	11,831.52
Kentucky	38	5,281.04	Texas	38	8,537.09
Maine	21	3,618.78	Utah	5	914.92
Maryland	21	4,613.89	Vermont	11	2,301.83
Massachusetts	4	752.25	Virginia	68	10,827.35
Michigan	116	18,296.76	Washington	5	760.97
Minnesota	73	12,880.00	West Virginia	6	996.91
Missouri	95	16,222.85	Wisconsin	104	17,064.10
Nebraska	13	2,245.51			
New Hampshire	4	819.75	Total	1,668	275,469.95
New Jersey	5	834.00			

Since January 1, 1900, the cost of star routes to the amount of $490,527.35 has been saved. It is conservatively estimated that since the installation of the first rural route, in 1896, star service has been discontinued equal to about one-seventh of the entire appropriation for that service, or $650,000. Wherever the county service is established star and special-messenger services are practically wiped out altogether, and as soon as the system is universally extended throughout the States in which complete establishment of rural service is practicable, practically all the star-route service within that territory will be discontinued.

Fourth-class post-offices.—During the same period 2,149 fourth-class post offices, whose postmasters' annual compensation aggregated $142,661.46, were discontinued. In counties where rural delivery is established as a complete system only post-offices on railroads remain. It is the policy of the Department to prevent, as far as possible, a duplication of service. Consequently every fourth-class post-office which is not necessary to supply patrons beyond the limits of rural free delivery is recommended to be abolished. This is not only in the interest of economy, but also necessary for efficient service. The retention of unnecessary post-offices in territory served by rural carriers tends to confusion in the distribution of mail. In many instances it actually operates to prevent delivery of mail to patrons through the hands of rural carriers. In such cases rural residents are compelled to travel to the post-office as of old, and thus are prevented from enjoying a service established for their benefit and which actually passes their gates. This anomalous condition should not be permitted to exist.

The following list shows the number of post-offices discontinued in each State on account of rural free delivery established from November 1, 1901, to October 31, 1902, and the compensation of the postmasters for the fiscal year ending June 30, 1901:

State.	Number of offices.	Compensation.	State.	Number of offices.	Compensation.
Alabama	56	$3,238.67	Missouri	84	$6,461.00
Arkansas	1	13.00	Nebraska	17	1,431.33
California	10	1,283.98	New Hampshire	10	1,435.93
Colorado	1	89.59	New Jersey	7	1,143.01
Connecticut	15	1,412.39	New York	200	15,678.15
Delaware	32	3,561.41	North Carolina	126	4,876.76
Florida	2	38.68	Ohio	133	9,362.91
Georgia	139	6,281.77	Pennsylvania	76	8,445.36
Illinois	94	7,227.96	South Carolina	90	2,433.51
Indiana	133	8,002.10	Tennessee	175	7,991.29
Iowa	90	6,730.48	Texas	41	3,828.59
Kansas	68	3,006.37	Utah	9	1,015.00
Kentucky	42	2,663.95	Vermont	13	1,116.62
Maine	38	3,660.86	Virginia	52	2,669.69
Maryland	75	8,718.70	Washington	4	186.90
Massachusetts	8	1,543.35	West Virginia	6	235.81
Oregon	2	123.94	Wisconsin	133	6,001.83
Michigan	95	6,062.95			
Minnesota	72	4,687.62	Total	2,149	142,661.46

OTHER FACILITIES WITH RURAL DELIVERY.

One of the distinguishing features of the rural free-delivery service is the great scope of its utility. With the establishment of a rural route every other postal facility becomes coextensive and cooperative. By providing for the registration of letters by carriers en route, the acceptance of money by them for the purchase of money orders, and the sale of postage stamps, postal cards, and stamped envelopes, the Department effectually places at the gate of each family all the conveniences supplied by a city post-office, with the exception of the direct issue and payment of money orders by carriers, and it is now proposed to add one or possibly both of these features also.

Payment of money orders by carrier recommended.—In several localities postmasters have, at their own risk, permitted rural carriers to pay money orders to patrons at their residences. The innovation has proved most satisfactory to the people, and not in one instance has there been a wrong payment of money by carrier or loss to postmaster on account of this practice. Rural letter carriers know their patrons and therefore are not likely to pay money to other than the payee of the order. For this reason and in view of the great convenience this added facility will bring to rural communities I have no hesitation in strongly recommending that it be officially extended to include the entire rural service after January 1, 1903.

Money orders issued through carriers.—The reports for the year 1902 of the number of money orders issued through rural carriers and the number of letters registered by them are a further demonstration of how eagerly the people avail themselves of every facility brought within their reach.

During the year 1901, 175,744 money-order applications were handled by 4,300 carriers. In order to make an approximate estimate of the number of applications per carrier, it will be necessary to establish an average force for the year. On July 1, 1900, there were 1,276 carriers, and during the year 3,025 carriers were appointed, at the rate of

about 250 a month. This would make the force of 1901 average about 2,800 carriers. These carriers handled during the year an average of 62.6 money orders each. In 1902, 625,946 money orders were issued through 8,466 carriers. Following the same calculation by which the average for 1901 was fixed, it is found that 6,400 carriers constituted the average force for 1902. They handled an average of 97.8 money orders during the year, an increase of 32.2 money orders per carrier, or almost 50 per cent. This is a gratifying record for the whole service, yet in county systems it is greatly exceeded.

In another part of this report a statement of the number of money orders sold by carriers in Carroll County, Md., shows an increase of 70 per cent. In Fairfield County, Conn., and Washington County, Tenn., the rate was slightly higher, and in Washington County, Pa., the increase was over 100 per cent. This tends to show that while rural free delivery throughout has given the use of the money-order system a great stimulus, the most remarkable results are obtained where the service is perfectly organized and operated as a complete local system.

Registration by rural delivery.—Not the least of the advantages conferred by rural free delivery is the power to register valuable mail in remote country districts and to safeguard its delivery by almost the same process as when a package for registration is handed into the registry window of a city post-office. The carefully devised regulations of the Third Assistant Postmaster-General, which are placed in the hands of each rural carrier, surround the registered mail received or delivered by him with every precautionary measure requisite to insure careful handling and facilities for detection in case of malfeasance. One hundred and fourteen thousand nine hundred and fifty-nine letters and packages have been registered by rural carriers in isolated farming communities, where a year or two ago the registration privilege could only be obtained by taking a day off and making a long drive to the nearest village post-office. The list of registered articles thus collected, as hereto appended, arranged by States and Territories, is interesting.

Alabama	1,038	Maine	3,890
Arizona	24	Maryland	8,662
Arkansas	160	Massachusetts	2,318
California	1,504	Michigan	5,932
Colorado	561	Minnesota	2,275
Connecticut	4,059	Mississippi	26
Delaware	673	Missouri	2,487
Florida	9	Montana	5
Georgia	2,112	Nebraska	937
Idaho	170	New Mexico	1
Illinois	5,628	New Hampshire	2,495
Indiana	6,926	New Jersey	2,086
Iowa	4,534	New York	8,574
Kansas	2,709	North Carolina	1,093
Kentucky	346	Texas	1,102
North Dakota	73	Utah	447
Ohio	10,042	Vermont	1,635
Oklahoma	91	Virginia	883
Oregon	313	Washington	313
Pennsylvania	13,510	West Virginia	2,598
Rhode Island	499	Wisconsin	4,567
South Carolina	1,513	Wyoming	43
South Dakota	321		
Tennessee	5,162	Total	114,595
Louisiana	249		

The number of letters registered in 1901 was 48,839, or about 17 per carrier, while those registered in 1902 reached 114,595, or about 18 per carrier. Reports from county services where a perfect system aids in extending the use of the registry system are very gratifying. In Carroll County, Md., the number of letters registered increased 18.2 per cent, in Fairfield County, Conn., 25 per cent, and in Washington County, Pa., 23 per cent.

Money-order and registry systems compared.—The increase in the number of letters registered by carriers has not kept pace with money-order transactions. This is easily explained by the fact that the cost of sending a small amount of money (less than $5) by means of the money-order system is considerably less than the postage and fee on a registered letter.

Systems not rivals.—The registry and money-order systems can not be regarded as rivals for public patronage or favor; each has its own important mission to fill, and rural free delivery is found to be a convenient medium through which they may be brought to millions of our citizens who heretofore have been denied the postal privileges enjoyed by residents of the city. Statistics of the rural free-delivery service plainly show to what extent this extension of postal facilities is appreciated by the rural communities of the United States. In not a single feature of the service has a decrease in business been found.

Rural free delivery and daily papers.—By permitting rural letter carriers to act as agents for newspaper publishers the Department adds another public convenience to rural free delivery. The opportunity to receive daily papers is a real blessing to the farmer and his family. The daily press opens to them a new view into the business and social world. It places them in direct contact with the centers of population and of trade, creating new opportunities, new ambitions, and new desires. In this way the service is bringing about an evolution in the social conditions of farm life, which will tend to lessen the flow of population from country to city.

Distribution of weather forecasts.—There is hardly a limit to the good work to be done through the medium of rural delivery. Through its means the work of other departments of the Government may be advanced. The Weather Bureau, for instance, finds the service a valuable aid in the distribution of weather forecasts. At many post-offices, where the proper information can be obtained early enough, display signals are carried by each carrier. In this way the farmer, by a glance at the passing wagon, knows just what the weather probabilities are. This information the farmers of to-day are anxious to receive, and the fact that the rural carrier conveys it makes the service a still greater convenience to rural communities.

RURAL BOXES.

In the act making appropriations for the service of the Post-Office Department for the fiscal year ending June 30, 1903, a proviso was inserted directing the Postmaster-General to investigate and report to Congress as soon as possible the advisability and practicability of purchasing and adopting a uniform metal lock box at a price not to exceed 50 cents, for the purpose of selling the same to patrons on rural free-delivery routes at cost. In accordance with this requirement proposals were invited, and 15 bids, accompanied by sample boxes, were

received and examined by a committee of experienced postal officials appointed for that purpose. Their conclusions, which were laid before Congress May 29, 1902, in Senate Document 378, Fifty-seventh Congress, first session, were, in effect, that no locked rural letter box of sufficient durability and security could be supplied for the price named, and that it would be to the best interests of the service that a standard of size, durability, and material of construction should be established by the Department, and that the patrons of rural delivery should be permitted to erect any box complying with these specifications after a sample thereof had been submitted to and approved by the special agent in charge of the division of Rural Free-Delivery Service in which it was proposed that the box should be erected.

These recommendations received the approval of the Postmaster-General, and on the 9th of July, 1902, order 739 was issued, directing that on and after October 1, 1902, all boxes erected on rural-delivery routes should comply with the requirements thus laid down. Numerous designs in rural boxes, which manufacturers offer to supply at reasonable rates, have been submitted to the division headquarters. A number of these boxes have been favorably acted upon, and the manufacturers have been authorized to stencil thereon "Approved by the Postmaster-General," so as to bring these mail appliances within the protection of the United States statutes and to punish those inflicting willful or malicious injury upon them or interfering with the mail matter deposited therein.

Protection of the rural boxes.—The importance of bringing about gradually and without unnecessary friction a strict compliance with the departmental order that only boxes approved by the Postmaster-General shall be erected on rural routes lies in the fact that only by this method can the rural mails be given the protection which is afforded in all other branches of the postal service. The manufacture of boxes is practically thrown open to all who will comply with the requirements laid down as to size, shape, material, and security, but it is insisted that the United States mails shall be deposited in boxes appropriate for their reception and protection.

During the year depredations were committed on 347 letter boxes belonging to rural patrons and upon 13 United States collection boxes used in connection with the rural free-delivery service, a total of 360. In consequence of the amended provision of law passed by Congress at its last session, providing severe penalties for depredations on approved rural boxes, 15 convictions of offenders of this class have been secured in the United States courts, 7 other persons have been held for action by the grand jury, 166 cases were dropped for want of evidence, 170 cases still await action, and 2 cases resulted in acquittal.

SUPERVISION OF THE SERVICE.

Inspections.—It is just as necessary to maintain efficient service as it is to properly establish it. A great many postmasters not familiar with rural free delivery and almost all rural letter carriers having had no previous experience in the postal service are apt to form erroneous ideas about their respective duties and to misconstrue the regulations and orders of the Department. Under such circumstances it is natural that irregularities creep into a new service which, if

allowed to grow into abuses, would impair the service if not entirely destroy its usefulness. To cure such conditions, wherever they may be found to exist, is the special work assigned to the supervisor of rural free delivery and route inspectors. When irregularities are disclosed by complaints of patrons and others special investigations are made, but those that are not brought to the attention of the Department in that way are sure to be brought to light by the regular inspections which are made of each route at least twice a year. At the same time carriers as well as postmasters are fully instructed in their duties. As a result a more intelligent local supervision of routes is obtained and the efficiency of the service promoted.

Complaints filed against letter carriers on account of personal misconduct or unsatisfactory service are also investigated through the supervisor's office. Requests for change or modification of routes, rearranging and adjusting carriers' schedules, and the inspection of roads are also handled in this office. Inspections are made by route inspectors under the direct charge of special agents in charge of divisions, the position of district supervisor having been abolished July 1, 1902.

Box inspections.—One of the important duties of the supervisor's office is the inspection of rural mail boxes. The order of the Postmaster-General prescribing specifications for these boxes became effective October 1, 1902. In order to prevent confusion sure to arise if the enforcement of the order were placed in the hands of postmasters and carriers, instructions were issued October 1, 1902, to the effect that neither postmasters nor carriers shall condemn or decline to serve any box which has been or is now being served on rural routes. The Department proposes that unsuitable boxes shall be condemned only through a regular inspection by a route inspector or special agent. In this way a uniform method of inspection will be established. Inspections will begin December 1, 1902, to enforce the provisions of the Postmaster-General's order, fully referred to in another part of this report.

The following statement shows the number of inspections, regular and special, made during the year:

For the fiscal year ending June 30, 1902, the number of inspections made by the route inspectors attached to the six districts was as follows, viz:

District No. 1, New York, N. Y.:		
Regular inspections made		808
Special inspections made—		
For changes of routes	285	
For complaints versus carriers	40	
For miscellaneous causes	132	
Total specials		457
Total inspections		1,265
District No. 2, Philadelphia, Pa.:		
Regular inspections made		636
Special inspections made—		
For changes of routes	273	
For complaints versus carriers	39	
For miscellaneous causes	219	
Total specials		531
Total inspections		1,167

District No. 3, Marietta, Ohio:			
Regular inspections made		1,292	
Special inspections made—			
For changes of routes	403		
For complaints versus carriers	60		
For miscellaneous causes	130		
Total specials		593	
Total inspections			1,885
District No. 4, Chicago, Ill.:			
Regular inspections made		2,218	
Special inspections made—			
For changes of routes	430		
For complaints versus carriers	91		
For miscellaneous causes	206		
Total specials		727	
Total inspections			2,945
District No. 5, Nashville, Tenn.:			
Regular inspections made		483	
Special inspections made—			
For changes of routes	98		
For complaints versus carriers	17		
For miscellaneous causes	57		
Total specials		172	
Total inspections			655
District No. 6, San Francisco, Cal.:			
Regular inspections made		225	
Special inspections made—			
For changes of routes	40		
For complaints versus carriers	6		
For miscellaneous causes	20		
Total specials		66	
Total inspections			291
Total inspections by all districts			8,127
Subdivided as follows:			
Regular inspections			5,544
Specials—			
Changes of routes			1,567
Complaints versus carriers			343
Miscellaneous reasons			773

Much good is accomplished by these inspections, not only in the results obtained in specific cases but in the moral effect they have upon the discipline of the service throughout.

CARRIERS' SCHEDULES.

It is the aim of the Department, by a thorough investigation of service rendered and of time schedules, and by a careful inspection of routes, to establish a uniformity of rural service throughout the country. As the number of miles traveled by carrier is largely dependent upon the kind and condition of roads, time schedules and mileage vary in different sections of the country. In Georgia, for instance, carriers require, on an average, eight hours and fifteen minutes to travel and serve a route of 23.41 miles, while in California they are able to serve

a route 25.9 miles in length in five hours and forty-eight minutes. In Virginia the average is nine hours and seven minutes for 23 miles, while in Maine only five hours and forty-seven minutes are required to serve a route a trifle over 23.5 miles in length.

For the purpose of comparison, the average of mileage made by rural carriers in eleven States, representing the Atlantic and Pacific coasts, the north and the south and the middle sections of the United States, was computed. In California carriers average 25.9 miles a day; in Georgia, 23.41; in Kentucky, 23.9; in Maine, 23.26; in Massachusetts, 22.8; in Michigan, 25; in Missouri, 20.75; in Ohio, 24; in Oregon, 22; in South Carolina, 25.95; in Virginia, 23, making a general average in these eleven representative States of 23.63 miles a day, or a trifle more than 3½ miles per hour.

It should be remembered that in this hour, while the carrier serves 3½ miles, he must open every rural mail box either to deliver or collect mail, must stop frequently to sell stamps or stamped envelopes, receive letters presented to him for registration and stop long enough to fill out and give to patron a proper receipt for same; and he is often called upon to transact money-order business. Besides his regular duties a carrier often serves intermediate post-offices with closed pouches. This, too, takes time and not infrequently causes delays.

It must also be borne in mind that a rural carrier is required to deliver at the door of a bona fide patron of his route any registered letter, special-delivery letter, or pension papers that may be addressed to one of his patrons. This "special house delivery" sometimes requires the carrier to drive two, three, and even more miles off his route, increasing in that measure his daily travel.

The average time required for a rural carrier to serve one mile of route, as deduced from comparative table of the eleven representative States mentioned, is a few seconds over 16 minutes, and the cost of such delivery to the Government is a trifle over 8.1 cents a mile.

In view of the fact that that "8.1 cents per mile" covers carrier's delivery and mail collection as well as clerical service, as heretofore described, the cost is not exorbitant, and when compared with the cost per mile of the star-route service, for the mere transportation of mail in bulk, it is entirely reasonable.

Nevertheless, the Department hopes to be able to reduce these figures somewhat. Investigations have shown that in localities where the service has been thoroughly established and roads are in fairly good condition, a 25-mile route may be served properly in 6 or 6½ hours. With uniform 25-mile routes the cost of service per mile, by rural carrier, will be reduced to 7½ cents, carrier's salary being $600 per year.

The Department also hopes, during the next year, to cause a great improvement in carriers' time schedule along the route; in other words, punctuality in time of arriving at given points each day in order that patrons may know with some degree of certainty when they may meet the carrier at the box to register a letter or make application for a money order, or to purchase stamps; also that at intermediate post-offices, having closed-pouch service by rural carrier, postmasters may know at what time pouch mail should be closed and ready for exchange with carrier.

House delivery of special first-class matter will render impossible an absolute observance of any time schedule along the route, but the

working up to a schedule will tend toward greater punctuality and regularity of service along the line of route.

Maps.—As rural free delivery becomes more extensive, the necessity for correct maps is increased. This is especially true in counties where a complete system of rural delivery has been installed.

The preparation of maps is in charge of the supervisor. As soon as a county has reached the point where the establishment of a few more routes will give it a complete service three copies of the county map are prepared for the use of the special agent who is assigned to complete the work. On one of these maps is outlined the existing service. On another copy are indicated all changes or adjustments made necessary by the adding of new routes. When the work of inspecting and readjusting routes is finished the special agent drafts on the third copy the complete and perfected service. The maps are then returned to Washington to be used as data for the preparation of a correct map showing the county service in detail.

Maps of this kind are prepared in such a way that they may be easily reproduced by the usual processes. Copies of these are sold to merchants and others at a price sufficient to cover the expense the Department has incurred for the work.

Good roads.—One of the prerequisite conditions for the establishment of the service is good roads. The experience of the past two or three years has convinced the Department that the success of the service, the ultimate perfection of its operation, depends so largely upon the good condition of the public highways that it exacts from petitioners for the service an agreement on their part to improve the roads or to see that the proper authorities will do so. Periodical inspections are made of all routes in order to ascertain what roads need repairs, so that steps may be taken to have road supervisors or other authorities make the necessary improvements or repairs. The Department realizes, of course, that it is powerless to legally force a compliance with requests of this kind, but it has it within its power, at any time, to withdraw rural delivery from the roads over which its operation is impeded or rendered impossible because of a lack of proper attention to public highways by State or county authorities.

It is gratifying to note that the Department has had to resort to this extreme in but one or two instances. In almost every case its request is promptly complied with by both the authorities and the people. Special agents report a willingness, as a rule, on the part of prospective patrons of the service to repair and even build roads and bridges in order that they may be given the advantages of rural delivery. So anxious are they to receive the improved mail facilities afforded by rural free delivery that some counties have formally agreed in advance, through the proper authorities, to stone or gravel all roads in order to secure the installation of the county system. This is especially true of counties in the States of Indiana, Ohio, Michigan, Wisconsin, and Illinois.

The Department has taken such a deep interest in the building and maintenance of good roads that it has earnestly cooperated with the Department of Agriculture, through its Division of Good Roads Inquiries, to encourage the movement. For this reason it has been represented officially at several good roads conventions, held in different sections of the country under the auspices of the Department of Agriculture.

It may be claimed that the motive back of the Post-Office Depart-

ment's interest in good roads is a selfish one; that it desires the building of good roads primarily for the benefit of rural free delivery. To a certain extent this is true; the Department's first interest is to provide an efficient and satisfactory mail service to all the people. This can not be done in country districts unless the roads traveled by rural carriers are passable during all seasons of the year and under all conditions of weather. This office is therefore ready to promote or encourage any movement that will improve conditions for the operation of an efficient mail service.

The enthusiastic friends of the good-roads movement admit that it has never before received an impetus equal to that created by the agitation for and introduction of rural free delivery. In fact, it is generally conceded that the practical solution of the question lies in the rapid and systematic extension of that service—the one channel through which the National Government may assist in bringing about road improvements throughout the country, which as internal improvements could not be aided by direct appropriation from the Federal Treasury.

CLASSIFICATION OF THE RURAL FREE-DELIVERY SERVICE.

On November 27, 1901, the President issued an amendment to the civil-service rules classifying all employees of the rural free-delivery service. Under the provisions of the rule 113 special agents and route inspectors immediately became classified, but provision was made that rural carriers would not be included until special regulations could be prepared to meet the peculiar conditions surrounding the new service.

In the classification of the rural letter-carrier service a difficult problem presented itself. The rapid growth of the service, the conditions necessary to make a good and effective service must necessarily be fully considered in order that no stumbling-block might be placed in the way of progress, that no technicality might prevent the patrons of the various routes from being served by persons with whom they were acquainted and who possessed their confidence.

It was generally conceded from the first that the system of classification established in the city carrier service, if applied to the rural service, would operate to prevent the extension of rural free delivery at a sufficiently rapid rate to satisfy the eager and persistent demands of the people. Some simpler method had to be devised. To this end several conferences were held between representatives of the Department and the members of the Civil Service Commission. On December 26, 1901, suitable regulations were agreed upon and at once approved by the Postmaster-General. On the following day they received the formal approval of the United States Civil Service Commission and were promptly promulgated to become effective February 1, 1902.

Under section 1 of the regulations, a nonpartisan board of five members, selected by the Postmaster-General from among the employees of the Post-Office Department, to be known as the Central Board of Examiners for the rural carrier service, was appointed by the United States Civil Service Commission.

The first regular meeting of the board was held on February 1, 1902. Between that date and the date of the writing of this report more than 50,000 applicants for appointment to the position of rural letter carrier in the various States of the Union have been examined and 4,046 certifications made.

Seven route inspectors are detailed to act under the immediate direction of the board in conducting special examinations for the pur-

pose of filling vacancies in the service at post-offices where no eligible register exists. All the special agents and other route inspectors of the rural free-delivery service are auxiliary members of the board, and act in a dual capacity for it and for the Department. All papers and reports in connection with the examinations of applicants for positions in the rural letter-carrier service are forwarded direct to the board, where each paper is rated upon its merit and the report of the examiner. The name of the person who secures the highest mark is placed at the head of the eligible register and certified for appointment. The names of the other applicants who meet the requirements are placed upon the register in the relative order of the marks made by them, and are certified in turn when vacancies occur.

The records of these examinations are in the permanent custody of the board, but are subject to the direction and constant supervision of the United States Civil Service Commission, the board being held accountable to the Commission for every act in connection with the examinations.

The examination to which applicants are subjected is by no means technical or severe, but is a simple and practical test of their ability to read and write. It consists of two parts: First, a series of 29 personal questions relating to citizenship, place of residence, acquaintance with patrons, ability to furnish necessary equipment and a substitute to act in cases of emergency, physical condition, the filling in of a rural letter carrier registry receipt, and a receipt for money paid for the purchase of money orders, followed by the reading of 25 addressed cards. The answers to the questions and the receipts must be written in the applicant's own handwriting and acknowledged under oath. Second, an investigation on the part of the examiner as to the relative fitness of the various applicants. In this connection the special agent or route inspector conducting the examination is required to make a report upon the general reputation of each applicant, the condition of his health, and the wishes of the patrons of the route. The board, in making up the eligible register, carefully reviews the papers and the report, and they are rated in every case in accordance with an established rule approved by the Commission. Neither political nor religious considerations are entertained, but the best interest of the service alone controls.

On account of the rapid growth of the service and the marked change in the manner of making the appointments, a few unfortunate certifications may have been made in early stages of the work through error of the examiner in not making a proper investigation; however, the personnel of the rural letter-carrier service has manifestly improved. In many cases the competition is very animated. Young men of high character, realizing that the appointments are made upon merit, are induced to apply. Farmers, highly respected in their communities, look upon the work as an honorable and pleasant vocation. The carrier, knowing that he can rely upon the protection of the civil-service law in the faithful and honest performance of his duties, takes an interest in upbuilding the service.

This system of examinations make rural free delivery strictly a home service. Section 15 of the regulations provides that—

> Application shall not be considered from a person who has not lived for at least one year directly on or within the territory of the route or within the territory of the office from which the route starts.

The rural carrier must therefore be a person well acquainted with the roads covered and the people served by the route.

The fact that there have been so few complaints against the special agents and route inspectors as to the conduct of these examinations is very gratifying. Every complaint has been fully investigated by the board, and in only one instance has such a complaint been of so serious a nature as to make it necessary to call to it the attention of the Department; in that instance the offending special agent was promptly disciplined.

In several instances complaint has been made that a postmaster has acted in collusion with his friends to keep competitors in ignorance of the time of an examination in the interest of the application of a certain friend. All cases of this kind about which the board was made cognizant have been fully investigated, and wherever it was found that the complaint was based upon facts the postmaster has been reprimanded, the examination reopened, and all bona fide applicants given an opportunity to compete. Whenever it is possible to do so a member of the board personally investigates complaints.

A member of the board has visited a majority of the special agents and route inspectors while they were conducting examinations in the field, so as to acquaint himself with the practical side of the work. In examinations for the appointment of carriers in county rural free-delivery service, where a large number of applicants invariably present themselves, some member of the board is nearly always present. In this way the work is kept under constant and close supervision, and the board is enabled to act upon frequent and useful suggestions for the betterment of the rapidly growing service.

In a majority of the examinations not less than four applications are received for each route, while in a number of cases more than thirty persons have appeared for examination for one appointment. In such cases it is difficult to determine upon their relative merit. In a special examination recently conducted for filling vacancies on routes No. 1 and No. 4 at Austin, Tex., there were thirty-two applicants. The route inspector who conducted the examination reported that after making a careful investigation he was convinced that each of the applicants bore an excellent reputation in the community in which he lived, and that any one of them would make a good carrier. In this case the board certified the applicant who received the highest rating in the scholastic part of the examination.

The plan on the whole has worked admirably, and the success of the experiment proves conclusively that the principle of the civil-service law may be applied to any class of public employment in such a manner as to meet the conditions peculiar to it.

* * * * * * *

DIVISION OF CORRESPONDENCE.

It is the duty of the division of correspondence to prepare replies to communications received from other divisions of the Department, from postmasters, or from others in the postal service, concerning questions which involve the proper construction to be placed upon the postal regulations and orders of the Postmaster-General; and to correspond with postmasters and the public upon miscellaneous subjects not expressly assigned to other divisions of the Department. Among

the most important cases that come to this division are those which involve the delivery of mail the ownership of which is in dispute, the delivery of mail addressed to minors, to pensioners, and others. Decisions as to whether certain matter shall be accepted for mailing are prepared in this division.

I respectfully recommend that Congress prohibit, under penalty, the establishment of private offices for the renting of boxes in competition with the post-office; the establishment of private post-offices for boycotting purposes, and the counterfeiting of postmarking stamps.

The attention of Congress should be called to the frequent mailing of explosives and other harmful matter. The Department has authority to withdraw such matter from the mails when found, but as it is usually sent sealed, the contents are unknown until revealed by a fire or after delivery to the addressee. I suggest that the carriage of inflammable matter by mail be absolutely forbidden, under a severe penalty, and that a penalty be provided for the mailing of disease germs, except under such regulations as the Postmaster-General shall prescribe.

ROBERT J. WYNNE,
First Assistant Postmaster-General.

Hon. HENRY C. PAYNE,
Postmaster-General.

REPORT OF THE SECOND ASSISTANT POSTMASTER-GENERAL.

POST-OFFICE DEPARTMENT,
OFFICE SECOND ASSISTANT POSTMASTER-GENERAL,
Washington, D. C., October 31, 1902.

SIR: I have the honor to submit the following report of the Office of the Second Assistant Postmaster-General for the fiscal year ended June 30, 1902:

MAIL SERVICE IN GENERAL.

The mail service in operation June 30, 1902, was as follows:

Service.	Number.	Aggregate length.	Annual rate of expenditure.
		Miles.	
Star routes	21,767	259,539.92¼	$5,646,773.59¼
Special office routes	1,788	16,549.14	38,847.73
Steamboat routes	210	34,338.85	598,251.05
Railroad routes	2,844	187,129.73	35,049,211.22
Railway post-office car routes	251	47,957.12	4,904,396.73
Railway Mail Service (officers and clerks)	9,627		10,264,588.38
Mail messenger routes	7,542	5,258.21	1,055,974.06
Wagon routes (in cities)	233	1,216.54	788,322.67
Electric and cable car routes	327	3,508.11	414,348.75
Necessary and special facilities on trunk lines			195,636.25
Mail equipments			325,527.10
Total inland service			59,281,877.58¼
Foreign mails:			
Aggregate cost		$2,472,986.97	
Less intermediary service to foreign countries, etc		227,361.42	
			2,245,625.55
Total			61,527,503.08¼

Summary of all classes of domestic mail service in operation June 30, 1902.

Number of routes	34,711
Length of routes.....miles	507,540.53½
Number of miles traveled per annum	474,234,687.93
Annual rate of expenditure	$59,281,877.53¼
Rate of cost per mile of length	$116.80
Rate of cost per mile traveled.....cents	12.50
Average number of trips per week	8.98

Comparison with the report of June 30, 1901, shows—

	Per cent
Decrease in number of routes	605 or 1.71
Decrease in length of routes.....miles	4,267.91½ or .83
Increase in miles traveled per annum	8,088,628.81 or 1.73
Increase in annual rate of expenditure	$2,471,635.47½ or 4.35
Increase in rate of cost per mile traveled.....cents	0.32 or 2.62
Increase in rate of cost per mile of length	$5.81 or 5.23
Increase in average number of trips per week	.23 or 2.62

Number of contracts drawn in duplicate during the year	8,629
Proposals received during the year under general advertisement	12,629
Proposals received during the year under bulletin advertisements	6,234

MAIL SERVICE IN DETAIL.

The mail service in operation on June 30, 1902, for the several classes was as follows:

STAR SERVICE.

Number of routes	21,767
Length of routes.....miles	259,539.92½
Number of miles traveled per annum	130,087,224.64
Annual rate of expenditure	$5,646,773.59½
Rate of cost per mile traveled.....cents	4.34
Rate of cost per mile of length	$21.75
Average number of trips per week	4.81

Comparison with the report of June 30, 1901, shows—

	Per cent.
Decrease in number of routes	1,030 or 4.51
Decrease in length of routes.....miles	7,817.21½ or 2.92
Decrease in annual travel.....do	4,317,316.56 or 3.21
Increase in annual rate of expenditure	$442,356.72½ or 8.50
Increase in rate of cost per mile traveled.....cents	0.47 or 12.14
Increase in rate of cost per mile of length	$2.29 or 11.76
Decrease in average number of trips per week	.02 or .41

The appropriation for the last fiscal year was $5,580,000, which with the sum of $160,000 appropriated by the deficiency act of March 22, 1902, made the sum of $5,740,000 available for star service. The sum reported by the Auditor as expended, so far as shown by accounts stated to September 30, 1902, was $5,725,531, leaving an unexpended balance of $14,469. From this amount, however, must be deducted all accounts chargeable to this appropriation, which had not been stated by the Auditor up to September 30, 1902.

Annual letting of contracts.—The contracts for the star routes in the fourth contract sections, embracing the following States and Territories: Arkansas, Louisiana, Texas, Indian Territory, Oklahoma, Kansas, Nebraska, South Dakota, North Dakota, Montana, Wyoming, Colorado, New Mexico, Arizona, Utah, Idaho, Washington, Oregon,

Nevada, California, Alaska, and Hawaii, expired June 30, 1902, and new contracts were made last year for all of the star service in these States and Territories for the term from July 1, 1902, to June 30, 1906. These new contracts covered 6,037 routes, aggregating 110,563.82½ miles in length and 48,686,346.96 miles of annual travel, the latter item being an increase of 2,007,838.88 miles, or 4.30 per cent.

The annual rate of expenditure on July 1, 1902, for all the star routes in the States and Territories named, under the new contracts, effective that date, was $3,204,267.31⅞, an increase over the annual rate on June 30, 1902, of $947,058.63¾, or 41.95 per cent. The average rate per mile traveled on June 30, 1902, under the old contracts, was 4.83 cents. The average rate per mile traveled on July 1, 1902, under the new contracts, was 6.58 cents, an increase of 1.75 cents per mile, or 36.23 per cent.

At the average rate paid under the new contracts (6.58 cents per mile traveled—a contractor traveling 22 miles each week day would receive a fraction over $1.44 per day, or $453.10 per annum. These contracts were let only to those persons who agreed to reside on or contiguous to their routes and to give their personal supervision to the performance of the service, and nearly all of the contracts provide for delivering mail into boxes along the routes wherever the people desire such service.

The annual rate of expenditure for all star service was—

July 1, 1902	$6,565,743.69$\frac{7}{12}$
September 30, 1902	6,594,210.13$\frac{7}{12}$

The appropriation for the current fiscal year is $6,715,000. The amount estimated as necessary for the fiscal year ending June 30, 1904, is $6,960,000, being $245,000, or 3.64 per cent, more than the appropriation for the current fiscal year.

Advertisement for proposals.—The general advertisement issued September 15, 1902, and now pending, invites proposals for carrying the mails during a term of four years from July 1, 1903, to June 30, 1907, on all the star routes in the third contract section, embracing the following States: Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, and Missouri. The annual travel provided by this advertisement is increased 176,289.36 miles, or 0.79 per cent; the frequency of service is increased 4.18 per cent.

The annual rate of expenditure on September 30, 1902, for star service in this section was $789,777.82¼.

The number of routes included in the pending advertisement is 3,909, aggregating 37,646.86 miles in length and 22,458,973.68 miles of annual travel.

This advertisement contemplates that the contractors shall reside on the routes which shall be awarded to them, and the contracts will provide for delivery of mail into boxes along the lines of the routes wherever such service is desired by the people.

Box delivery on star routes.—The system of box-delivery service has now been applied wherever practicable to all of the first contract section, including the States from Maine to West Virginia, having 5,578 routes, and to the fourth contract section, including all of the States and Territories (three excepted) west of the Mississippi River, having 6,037 routes; also to the State of South Carolina, and to miscellaneous routes throughout the remainder of the country wherever new contracts have been made, so that the people on considerably more than

one-half of all the star routes in the United States are now enjoying the advantages of this box-delivery service. The fiscal year just closed was the first year of the contracts for this class of service in the first contract section, Maine to West Virginia, and in June last inquiries were sent to each of the routes to ascertain the extent to which the box delivery was being utilized. The replies received from 4,840 routes show that 32,798 boxes or cranes have been erected along these routes, and that 42,728 families are having their mail delivered to them by the carriers through such boxes or bags attached to cranes. The reports indicate that such service is generally satisfactory to the people who are availing themselves of it. A summary of these reports by States is as follows:

State.	Number of routes in State June 30, 1902.	Number of replies received.	Number of boxes or cranes along routes.	Number of families supplied by boxes or cranes.
Maine	414	377	2,888	3,400
New Hampshire	166	149	886	1,191
Vermont	189	172	1,346	1,668
Massachusetts	172	162	937	1,344
Rhode Island	29	25	70	140
Connecticut	104	92	565	749
New York	951	836	8,354	10,144
New Jersey	183	162	635	815
Pennsylvania	1,247	1,042	7,940	10,705
Delaware	34	26	66	86
Maryland	280	263	1,097	1,507
Virginia	1,192	983	4,516	6,499
West Virginia	617	551	3,498	4,480
Total	5,578	4,840	32,798	42,728

Star service discontinued.—The star service discontinued during the year ended June 30, 1902, by reason of the establishment of rural free-delivery service amounted to $265,013.98.

In some cases this office subsequently found it necessary to reestablish the star service, but the cost of service as reestablished has not been deducted from the amount above named.

Alaska.—The contracts for all mail transportation in Alaska expired on June 30 last and new contracts were executed for service for the term beginning July 1, 1902.

The first mail transportation by railroad authorized in Alaska was that which was established last May on the railroad between Skagway and the Canadian boundary line at White Pass, a distance of 20 miles. The same railroad extends 90 miles further over Canadian territory to White Horse, and it is understood that our Alaskan mails are carried on that part of the line under arrangements made by Canada. Beginning July 1 last, the Canadian department agreed to transport the mails over her territory between our boundary line at White Pass and the boundary line near Eagle, Alaska. Among the principal routes included in the new contracts is one along the Yukon River from Eagle to Tanana, 567 miles, and from Tanana to St. Michael, 423 miles. The mails are to be carried on these lines not less frequently than once a week, except for four months of the year while the ice is either forming or breaking on the Yukon River, when the service is to be twice a month. As the mails on these routes in winter time must be carried by dog teams and sleds, the weight is limited during the winter, but the contracts provide for carrying the mails by steamers during the summer season on the Yukon, without limit of weight, as

often as the steamers may run, which will be more frequently than at other seasons. There is a connecting route from Nome to Unalaklik, 230 miles, once a week for four months in the year and twice a month for three months in the year; also an overland route from Eagle to the southern coast at Valdez, 413 miles, twice a month, in connection with steamers to and from Seattle. Service has been established from Fort Yukon to Bettles, 250 miles, one round trip a month except in May and October; all of this route is north of the Arctic Circle. Contracts have also been renewed for carrying all classes of mail, without limitation of weight, during the season of navigation from both Seattle and San Francisco to Nome and St. Michael, and for a connecting steamer line from St. Michael to Golovin, Nome, Teller, and York. During the summer just closed mail-steamer lines were extended further north than theretofore and mails were carried from Nome by Shishmaref, Deering, and Kotzebue Mission to the mouth of the Kowak River, a distance of 331 miles. Improved steamer service has been provided between Seattle and Skagway.

The following is a summary of the service in Alaska under arrangements made to October 15, 1902:

Service.	Routes.	Length.	Annual travel.	Annual pay.
	Number.	*Miles.*	*Miles.*	
Star	16	3,772.50	155,916	$163,642.92
Steamboat	17	15,988	642,156	125,348.52
Railroad	1	19.79	12,348.96	2,216.67
Mail-messenger	2	4.80	2,620	725.00
Total	36	19,785.09	813,040.96	291,933.11

Hawaii.—The temporary contracts for mail transportation in Hawaii, made after the service in the Hawaiian Islands was assumed by the United States, expired June 30 last, and the first general letting for a four-year term occurred last year.

The following is a summary of the mail service in Hawaii under the new contracts, effective July 1, 1902:

Service.	Routes.	Length.	Annual travel.	Annual pay.
	Number.	*Miles.*	*Miles.*	
Star	29	575.47	164,341.84	$20,394.00
Steamboat	13	13,981	518,932	69,000.00
Railroad	3	83.05	51,823.20	3,550.38
Mail-messenger	49	158.85	29,276.48	4,512.00
Total	94	14,798.37	764,373.52	97,456.38

Porto Rico.—The following is a summary of mail service in Porto Rico as it existed October 17, 1902:

Service.	Routes.	Length.	Annual travel.	Annual pay.
	Number.	*Miles.*	*Miles.*	
Star	32	548.16	439,208.64	$30,953.29
Steamboat	2	2,811	90,048	43,400.00
Railroad	3	122.35	76,346.40	5,230.45
Mail messenger	10	6.82	8,511.36	883.00
Total	47	3,491.33	614,114.40	80,466.74

SPECIAL OFFICE SERVICE.

The amount expended for this class of service during the year ended June 30, 1902, was $38,847.73; during the year ended June 30, 1901, $32,393.15.

The number of special offices on June 30, 1902, was 1,788, with an aggregate length of 16,549.14 miles, and an annual travel (estimated on the basis of 2.17 average trips per week) of 3,742,140.56 miles.

Comparison with the previous year shows:

		Per cent.
Increase in number of routes		122, or 7.32
Decrease in length of routes	miles	1,244.95, or 6.99
Increase in annual travel	do	655,056.88, or 21.21
Increase in annual expenditure		$6,454.58, or 19.92
Increase in rate of cost per mile of length		$0.53, or 29.12
Increase in average number of trips per week		.67, or 44.66

The rate of cost per mile traveled was the same as for the previous year, 1.04 cents.

The compensation of this class of service is limited by law (Rev. Stat., sec. 3971) to an amount not exceeding two-thirds of the salaries paid to the postmasters at the several offices supplied, the postmasters being authorized to secure such frequency of service as may be practicable for that sum.

The expenditures for this service are chargeable to and included in the estimate for star service.

Special-office service is regarded as but a temporary arrangement for the supply of newly established post-offices that are not on or near the lines of existing routes, and as soon as the new office shows a number of people to be supplied or an amount of mail to be carried that will justify such action, regular contract service is provided for its supply.

STEAMBOAT SERVICE.

Number of routes		210
Length of routes	miles	34,338.85
Annual travel	do	5,416,397.72
Annual rate of expenditure		$598,251.05
Rate of cost per mile of length		$17.42
Rate of cost per mile traveled	cents	11.04
Average number of trips per week		1.51

Comparison with the previous year shows—

		Per cent.
Increase in number of routes		21, or 11.11
Increase in length of routes	miles	367.95, or 1.08
Increase in annual travel	do	764,139.94, or 16.42
Increase in annual rate of expenditure		$55,265.73, or 10.17
Increase in rate of cost per mile of length		$1.44, or 9.01
Decrease in rate of cost per mile traveled	cent	0.63, or 5.40
Increase in average number of trips per week		0.20, or 15.26

The appropriation for the last fiscal year was $586,000, which, with the sum of $13,000 appropriated by the deficiency act of March 22, 1902, made a total of $599,000 available.

The sum expended, as reported by the auditor on accounts stated to September 30, 1902, was $563,062.75, leaving an unexpended balance of $35,937.25, out of which must be paid the accounts not adjusted at that date.

The annual rate of expenditure on July 1, 1902, under contracts made during the past fiscal year for the performance of steamboat

service from July 1, 1902, to June 30, 1906, in the fourth contract section, was $305,749.75, an increase in the annual rate of expenditure on June 30, 1902, of $62,867.41. The rate of cost per mile traveled in that section on June 30, 1902, was 10.44 cents; on July 1, 1902, 13.44 cents, an increase of 28.73 per cent.

The appropriation for the current fiscal year is $641,000.

The annual rate of expenditure was:

July 1, 1902	$662,591.46
September 30, 1902	666,001.58

The amount estimated as necessary for the fiscal year ending June 30, 1904, is $693,000, being $52,000, or 8.11 per cent, more than for the current fiscal year.

MAIL-MESSENGER SERVICE.

Number of routes		7,542
Length of routes	miles	5,258.42
Annual travel	do	10,495,622.40
Annual rate of expenditure		$1,055,974.06
Rate of cost per mile of length		$200.82
Rate of cost per mile traveled	cents	10.06
Average number of trips per week		19.19

Comparison with the previous year shows—

		Per cent.
Increase in number of routes		189 or 2.57
Increase in length of routes	miles	167.08 or 3.28
Decrease in annual travel	do	45,724.36 or .43
Increase in annual rate of expenditure		$60,162.30 or 6.04
Increase in rate of cost per mile of length		$5.23 or 2.67
Increase in rate of cost per mile traveled	cent	.62 or 6.56
Decrease in average number of trips per week		.72 or 3.61

The appropriation for the last fiscal year was $1,038,000. The sum expended, as per Auditor's report, was $1,025,245.50, leaving an unexpended balance of $12,754.50.

The appropriation for the current fiscal year is $1,083,000.

The annual rate of expenditure was—

July 1, 1902	$1,046,006.93
September 30, 1902	1,066,779.52

The amount estimated as necessary for the fiscal year ending June 30, 1904, is $1,160,000, being $77,000, or 7.11 per cent more than the appropriation for the current fiscal year.

PNEUMATIC-TUBE SERVICE.

No appropriation having been made for this service for the year ended June 30, 1902, no service was performed during that fiscal year.

The appropriation act for the current fiscal year, approved April 21, 1902, contained the following provision:

For the transmission of mail by pneumatic tubes or other similar devices, five hundred thousand dollars, or so much thereof as may be necessary; and the Postmaster-General is hereby authorized to enter into contracts for a period not exceeding four years after public advertisement once a week for a period of six consecutive weeks in not less than five newspapers, one of which shall be published in each city where the service is to be performed; that the contracts for this service shall be subject to the provisions of the postal laws and regulations relating to the letting of mail contracts, except as herein otherwise provided, and that no advertisement shall issue until after a careful investigation shall have been made as to the needs and practicability of such service until a favorable report, in writing, shall have been submitted to the Postmaster-General by a commission of not less than three expert postal officials, to be named by him; nor shall such advertisement issue until in the judgment of the Post-

master-General the needs of the postal service are such as to justify the expenditure involved. Advertisements shall state in general terms only the requirements of the service and in form best calculated to invite competitive bidding.

That the Postmaster-General shall have the right to reject any and all bids; that no contract shall be awarded except to the lowest responsible bidder, tendering full and sufficient guaranties, to the satisfaction of the Postmaster-General, of his ability to perform satisfactory service, and such guaranties shall include an approval bond in double the amount of the bid.

That no contract shall be entered into in any city for the character of mail service herein provided which will create an aggregate annual rate of expenditure, including necessary power and labor to operate the tubes, and all other expenses of such service, in excess of four per centum of the gross postal revenue of said city for the last preceding fiscal year.

That no contract shall be made in any city providing for three miles or more of double lines of tube which shall involve an expenditure in excess of seventeen thousand dollars per mile per annum, and said compensation shall cover power, labor, and all operating expenses.

That the Postmaster-General shall not, prior to June thirtieth, nineteen hundred and four, enter into contracts under the provisions of this act involving an annual expenditure in the aggregate in excess of eight hundred thousand dollars; and thereafter only such contracts shall be made as may from time to time be provided for in the annual appropriation act for the postal service; and all provisions of law contrary to those herein contained are repealed.

Pursuant to this statute, advertisements were issued inviting proposals for pneumatic-tube service on various routes in the cities of Boston, Brooklyn, New York, Philadelphia, Washington, Chicago, and St. Louis. Bids were received, and as a result contracts were awarded as follows:

Boston, Mass., route No. 504003, to the Boston Pneumatic Transit Company, for service by a system employing an 8-inch tube between general post-office and north postal station, between general post-office and south terminal station, and between south terminal station and Essex station (a proposed branch post-office, to be located at No. 50 Essex street), approximate distance 2.07 miles, at the rate of $33,120 per annum, being $16,000 per mile of double lines of tubes, for the term beginning with the construction, acceptance, and operation of all or a part of the pneumatic tubes and ending June 30, 1906; and by a system employing a 10-inch tube between Essex station and Back Bay station, and between Essex station and Station A (South End) and Roxbury station, approximate distance 3.39 miles, at the rate of $32,868 per annum ($9,695.57 per mile) for double lines of tubes, for the term beginning with the construction, acceptance, and operation of all or a part of the tubes and ending June 30, 1904, and thereafter for service until June 30, 1906, provided Congress shall make a provision by law for the same at the rate of $16,000 per mile of double lines of tubes per annum.

New York, N. Y., route No. 507006, to the New York Mail and Newspaper Transportation Company, a temporary contract, for the purpose of more promptly starting the service by the tubes already constructed and which have heretofore carried the mails, the temporary contract being for service between general post-office and Station P; between general post-office and Station D, Madison Square station, Station F, and Station H, distance 5.195 miles; and between general post-office and the Brooklyn, N. Y., general post-office, distance 1.659 miles, at the rate of $16,799 per mile ($115,140.34 per annum) from October 1, 1902, which temporary contract was subsequently terminated from November 20, 1902, it having been superseded by the contract for the larger service, as follows:

Route No. 507006, to the New York Mail and Newspaper Trans-

portation Company, for service by a system employing an 8-inch tube between general post-office and Station P; between general post-office and Station S, Station D, Madison Square station, Station F, and Station H; between general post-office and Brooklyn, N. Y., post-office; between general post-office, Station V, Station A, Station O, Station E, and Station H; between Station H, Station Y, Station K, Station U, Station L, and Station J; between Station H, Station G, Station N, Station W, Station I, and Station J; approximate distance, 24.653 miles; at the rate of $414,145.74 per annum, being $16,799 per mile of double lines of tubes, for the term beginning not earlier than November 1, 1902 (probably about November 21 for the part of the lines already constructed and accepted), and ending June 30, 1906.

Philadelphia, Pa., route No. 510001 (for the purpose of more promptly putting the service into operation by the tubes already constructed and which have heretofore carried the mails), a temporary contract to the Pneumatic Transit Company for service between general post-office, Reading Terminal and Broad Street station, and between general post-office and Bourse station, 1.381 miles, at the rate of $39,183.60 per annum (being at the rate of $28,373.35 per mile), with the understanding that this temporary contract is to be terminated upon commencement of the larger service under contract, as follows:

Route No. 510004, with the Pneumatic Transit Company, service by a system employing an 8-inch tube, between general post-office, Reading Terminal, Broad Street station, and Station A; between Station A, Station J, and Station C; between general post-office, Station S, and Station O; and between Station A and Station B; and by a system employing a 6-inch tube between general post-office and Bourse station; distance 7.642 miles; at the rate of $129,914 per annum, being $17,000 per mile of double lines of tubes, for the term beginning with the construction, acceptance, and operation of the tubes, and ending June 30, 1906.

Chicago, Ill., route No. 535010, to the Illinois Pneumatic Service Company, for service by a system employing an 8-inch tube; between general post-office (new site), Chicago, Rock Island and Pacific Railroad depot (Van Buren street), and Station U (Union depot); between general post-office (new site), temporary post-office, or a postal station in the vicinity of that office, South Water station, and Chicago and Northwestern Railroad depot, or proposed postal station in the vicinity of that depot; between general post-office (new site), Illinois Central Railroad depot, Twenty-second street station, Armour station, and Stock-Yards station; approximate distance, 8.70 miles; at a maximum annual compensation of $141,685 (the proposal being at the rate of $16,475 per mile of double lines of tubes, but the maximum annual compensation for the distance named would be at the rate of $16,285.63 per mile); for the term of four years, beginning with the construction, acceptance, and operation of all or a part of the pneumatic tubes, provided such service begins on or before July 1, 1903, otherwise the contract to end June 30, 1907.

St. Louis, Mo., route No. 545001, to the St. Louis Pneumatic Tube Company, for service by a system employing an 8-inch tube; between general post-office and terminal station (Union railroad depot), and between general post-office and Relay depot at East St. Louis; approximate distance, 3.16 miles; at a maximum annual compensation of $48,267 (the proposal specifying $15,570 per mile per annum of double

lines of tubes, but the maximum annual compensation named would be at the rate of $15,274.37 per mile); for the term of four years, beginning with the construction, acceptance, and operation of all or a part of the tubes, provided such service begins on or before July 1, 1903, otherwise ending June 30, 1907.

REGULATION, SCREEN, OR OTHER WAGON SERVICE.

Number of routes		233
Length of routes	miles	1,216.54
Annual travel	do	4,437,066.95
Annual rate of expenditure		$788,322.67
Rate of cost per mile of length		$648.00
Rate of cost per mile traveled	cents	17.76
Average number of trips per week		35.07

Comparison with the previous year shows—

		Per cent.
Decrease in number of routes		1 or 0.42
Decrease in length of routes	miles	55.10 or 4.33
Increase in annual travel	do	178,970.94 or 4.20
Increase in annual rate of expenditure		$50,939.73 or 6.90
Increase in rate of cost per mile of length		$68.14 or 11.75
Increase in rate of cost per mile traveled	cent	.45 or 2.59
Increase in average number of trips per week		2.88 or 8.94

The appropriation for the last fiscal year was $800,000. The amount reported by the auditor as expended was $788,423.59, leaving an unexpended balance of $11,576.41.

The annual rate of expenditure on July 1, 1902, under contracts entered into during the past fiscal year for the performance of wagon service in the fourth contract section from July 1, 1902, to June 30, 1906, was $106,957.64, an increase of $50,100.51 over the annual rate of expenditure on June 30, 1902. The rate of cost per mile traveled on June 30, 1902, was 12.87 cents; on July 1, 1902, 21.98 cents, an increase of 70.78 per cent.

The appropriation for the current fiscal year is $875,000.

The annual rate of expenditure was:

July 1, 1902	$837,635.18
September 30, 1902	826,679.13

The amount estimated as necessary for the fiscal year ending June 30, 1904, is $990,000, being $115,000, or 13.14 per cent, more than the appropriation for the current fiscal year.

RAILROAD TRANSPORTATION.

Number of routes		2,844
Length of routes	miles	187,129.73
Annual travel	do	312,521,478.50
Annual rate of expenditure		$35,049,211.22
Rate of cost per mile of length		$187.29
Rate of cost per mile traveled	cents	11.21
Average number of trips per week		16.03

Comparison with the previous year shows—

		Per cent.
Increase in number of routes		98 or 3.56
Increase in length of routes	miles	3,771.19 or 2.05
Increase in annual travel	do	9,908,153.41 or 3.27
Increase in annual rate of expenditure		$1,167,820.98 or 3.44
Increase in rate of cost per mile of length		$2.51 or 1.35
Increase in rate of cost per mile traveled	cent	.02 or .17
Increase in average number of trips per week		.18 or 1.13

There was no unadjusted service on June 30, 1902.

The appropriation for the last fiscal year was $34,700,000. This sum the Auditor reports as expended under accounts adjusted to September 30, 1902.

The annual rate of expenditure for railroad transportation in the fourth contract section, embracing the following States and Territories: Arkansas, Louisiana, Texas, Indian Territory, Oklahoma, Kansas, Nebraska, South Dakota, North Dakota, Montana, Wyoming, Colorado, New Mexico, Arizona, Utah, Idaho, Washington, Oregon, Nevada, California, Alaska, and Hawaii, on June 30, 1902, was $9,211,786.52. The result of the regular quadrennial readjustment of the pay for railroad transportation in the States and Territories above-mentioned for the ensuing four years, based on a reweighing under orders issued to September 30, 1902, was an increase of $1,374,010.65, or 14.91 per cent.

The appropriation for the current fiscal year is $36,260,000. The annual rate of expenditure for railroad transportation was—

July 1, 1902	$36,406,800.58
September 30, 1902	36,463,226.64

The amount reported by the Auditor as withheld from the Pacific railroads on account of mail transportation is $629,275.04.

The amount estimated as necessary for the fiscal year ending June 30, 1904, is $38,242,000, being $1,982,000, or 5.46 per cent, more than the appropriation for the current fiscal year.

The following table will show the increase, by years, in the annual compensation paid to railroads for carrying the mails since the existing rates were fixed by Congress in 1878:

Annual increase in cost of railroad transportation from 1880 to 1902, inclusive.

Fiscal year.	Annual expenditure.	Increase.	Per cent.	Fiscal year.	Annual expenditure.	Increase.	Per cent.
1879	$8,463,197.00			1891	$22,398,868.66	$1,529,637.11	7.32
1880	9,237,945.00	$774,748.00	9.15	1892	24,196,329.71	1,797,461.05	8.02
1881	10,249,261.00	1,011,316.00	10.94	1893	25,716,605.85	1,520,276.14	6.28
1882	11,297,333.00	1,084,072.00	10.57	1894	27,153,091.16	1,436,485.31	5.58
1883	12,288,799.00	991,466.00	8.77	1895	27,961,931.78	808,840.62	2.97
1884	13,273,606.00	984,807.00	8	1896	28,941,880.47	979,948.69	3.50
1885	14,758,495.00	1,484,889.00	11.18	1897	30,171,542.69	1,229,662.22	4.24
1886	15,520,191.00	761,696.00	5.16	1898	30,786,375.89	614,833.20	2.03
1887	16,174,691.22	654,500.22	4.21	1899	31,942,150.88	1,155,774.99	3.75
1888	17,528,599.80	1,353,908.58	8.37	1900	33,424,982.15	1,482,831.27	4.64
1889	19,441,095.78	1,912,495.98	10.91	1901	33,881,390.24	456,408.09	1.36
1890	20,869,231.55	1,428,135.77	7.34	1902	35,049,211.22	1,167,820.98	3.44

Annual increase in cost of railroad transportation and railroad post-office cars combined, 1880 to 1902, inclusive.

Fiscal year.	Annual expenditure.	Increase.	Per cent.	Fiscal year.	Annual expenditure.	Increase.	Per cent.
1879	$9,567,589.00			1891	$25,183,713.82	$1,788,482.16	7.64
1880	10,498,986.00	$931,397.00	9.73	1892	27,126,529.11	1,942,815.29	7.71
1881	11,613,368.00	1,114,382.00	10.61	1893	28,910,195.30	1,783,666.19	6.57
1882	12,753,184.00	1,139,816.00	9.81	1894	30,358,190.01	1,447,994.71	5
1883	13,887,800.00	1,134,616.00	8.89	1895	31,205,342.58	847,152.57	2.79
1884	15,012,603.00	1,124,803.00	8.09	1896	32,405,797.17	1,200,454.59	3.84
1885	16,627,983.00	1,615,380.00	10.76	1897	33,876,521.19	1,470,724.02	4.53
1886	17,336,512.00	708,529.00	4.26	1898	34,703,847.56	827,326.37	2.44
1887	18,056,271.72	719,759.72	4.15	1899	36,117,875.74	1,414,028.18	4.08
1888	19,524,959.15	1,468,687.43	8.13	1900	37,793,981.74	1,676,106.00	4.64
1889	21,639,613.33	2,114,654.18	10.83	1901	38,519,624.27	725,642.53	1.92
1890	23,395,231.66	1,755,618.33	8.11	1902	39,953,607.95	1,433,983.68	3.72

Mail catchers and deliverers.—The Department has long felt the need of a more perfect device for exchanging mails with moving trains. An advertisement was issued March 28, 1902, inviting proposals from patentees or their assignees for the sale or use of patented devices intended to effect the exchange of mails with moving trains, such proposals to be received at the Department until August 20, 1902. There were 25 proposals received. A committee of experts was appointed to examine and thoroughly test the various devices submitted. That committee is now engaged in this work, the result of which will hereafter be announced.

SPECIAL FACILITIES.

The annual rate of expenditures for "necessary and special facilities on trunk lines" on June 30, 1902, was $195,636.25, and this sum was applied as shown in the following table:

Route No.	Termini.	Railroad company.	Miles.	Pay per annum.
109004	New York to Philadelphia	Pennsylvania	90.47	$11,308.75
113001	Philadelphia to Washington, D. C.	Philadelphia, Wilmington and Baltimore.	137.22	17,152.50
114002	Washington to Danville Junction, Va.	Southern	238.22	29,777.50
118013	Danville Junction to Charlotte, N. C.	do	142.00	17,750.00
118049	Charlotte to Atlanta, Ga	do	267.36	33,420.00
121003	Atlanta to Montgomery, Ala	Western of Alabama	171.61	21,451.25
124012	Montgomery to New Orleans, La	Louisville and Nashville	318.21	39,776.25
155010	Kansas City, Mo., to Newton, Kans.	Atchison, Topeka and Santa Fe.	201.02	25,000.00
	Total			195,636.25

The appropriation for the current fiscal year is $167,728.75.

No estimate is submitted for the next fiscal year.

ELECTRIC AND CABLE CAR SERVICE.

Number of routes		327
Length of routes	miles	3,508.11
Annual travel	do	7,534,757.16
Annual rate of expenditure		$414,348.75
Rate of cost per mile of length		$118.11
Rate of cost per mile traveled	cents	5.50
Average number of trips per week		20.65

Comparison with the report of the previous year shows—

		Per cent.
Increase in number of routes	1	or 0.30
Increase in length of routes	551.18 miles	or 18.64
Increase in annual travel	945,348.56 do	or 14.34
Increase in annual rate of expenditure	$51,734.58	or 14.26
Decrease in rate of cost per mile of length	$4.52	or 3.68
Decrease in average number of trips per week	0.77	or 3.59

The rate of cost per mile traveled was the same as for the previous year—5.50 cents.

The appropriation for the last fiscal year was $400,000; the amount reported by the auditor as expended, $389,987.61, leaving an unexpended balance of $10,012.39.

The appropriation for the current fiscal year is $450,000. The annual rate of expenditure was—

July 1, 1902	$420,854.51
September 30, 1902	433,834.13

The sum estimated as necessary for the fiscal year ending June 30, 1904, is $510,000, being $60,000, or 13.33 per cent, more than the appropriation for the current fiscal year.

RAILWAY POST-OFFICE CARS.

Number of routes		251
Length of routes	miles	47,957.12
Annual rate of expenditure		$4,904,396.73

Comparison with previous year shows—

		Per cent.
Increase in number of routes		14 or 5.90
Increase in length of routes	miles	2,177.44 or 4.75
Increase in annual rate of expenditure		$266,162.70 or 5.73

The appropriation for the last fiscal year was $4,816,000; the sum expended, as reported by the Auditor, was $4,657,368.57.

The amount reported by the Auditor as withheld from Pacific railroads on account of railway post-office car service was $104,615.

The appropriation for the current fiscal year is $5,104,960.

The annual rate of expenditure was—

July 1, 1902	$4,904,014.63
September 30, 1902	5,019,000.52

The amount estimated as necessary for the fiscal year ending June 30, 1904, is $5,411,000, being $306,040, or 6 per cent more than the appropriation for the current fiscal year.

RAILWAY MAIL SERVICE.

In the report of the General Superintendent of the Railway Mail Service to this office will be found the details concerning the operations of that service. Among the matters of interest the following may be noted:

Extent of service and force employed.—At the close of the year there were 1,350 lines of traveling post-offices (railroad, steamboat, and electric car), covering 178,796 miles in length; the number of clerks employed was 9,731; annual miles traveled by them in cars, 221,589,999; adding to this the closed-pouch and express-pouch service, the grand total of miles traveled was 323,166,767.

Equipment.—The number of whole cars and apartments in use and in reserve was 3,785. In addition to these, there were 24 cars on electric lines under the supervision of the Railway Mail Service and 83 apartments on steamboat lines.

Distribution.—It is estimated that there were handled by railway postal clerks during the year 8,177,531,240 pieces of first-class matter and 6,885,299,400 pieces of all other classes, making a total of 15,062,830,640 pieces, exclusive of registered matter. Of registered matter it is estimated that the railway postal clerks handled 24,174,174 packages and cases, through registered pouches and inner-registered sacks. During the year there were 1,309,594 errors reported as made by clerks in the distribution of this mail, the ratio being but 1 error to 11,502 correctly distributed.

Illegible addresses.—Matter illegibly or improperly addressed so that it required proper attention, or which could not be delivered, amounted during the year to 19,954,437 pieces, an increase of 2,755,442 as compared with the preceding year; 10,821,051 of these were returned to

senders or corrected and forwarded to destination, the remainder being sent to the Dead-Letter Office, or otherwise disposed of as provided by the regulations.

Case examinations.—These are the examinations which the clerks undergo from time to time to keep themselves proficient in their duties. During the year there were 24,313 examinations of permanent and probationary clerks who handled 25,447,356 cards with an average of 98.77 per cent correct. There were also 2,464 examinations of substitute clerks who handled 2,257,068 cards with an average of 97.83 per cent correct.

Casualties.—There were 296 casualties to mail cars last year, in which either mail or clerks or both were injured. Nine clerks were killed, and 88 seriously and 302 slightly injured. Constant effort is made to surround the clerks with every safeguard; the cars are strongly constructed, and the latest improved devices for heating and lighting are employed, but still the record shows a considerable number of clerks either injured or killed each year. In the appropriation act for the current fiscal year provision was made for the first time authorizing the Postmaster-General to pay to the legal representatives of any railway postal clerk who shall be killed while on duty, or who, being injured while on duty, shall die within one year thereafter as the result of such injury, the sum of $1,000. This provision is greatly appreciated and affords much needed relief in that class of cases. It is also the practice of the Department to continue to pay a clerk injured while on duty his full salary for a period not exceeding one year after the injuries are received unless sooner able to resume duty, and Congress has made provision for the employment of acting clerks in place of clerks so injured.

Shortage slips.—The shortage slip has become one of the essential features of the service, and its advantages are becoming more and more apparent now that its introduction has become general throughout the entire service. If a pouch fails to make its regular connection a shortage slip is made out and dispatched in lieu of the missing pouch. The cause of the failure of the pouch to connect is thus disclosed and reported at once to the proper officer of the service by the railway postal clerk, or to the proper official of the railroad by the employee of that railroad, and long and vexatious investigations are thereby avoided. Taken in connection with the requirement to check all pouches in and out of mail cars and mail wagons, it furnishes a complete trace from office of dispatch to office of destination.

Civil-service methods.—The operation of the civil-service rules governing appointments and promotions in the service continues to be satisfactory. The effect of the additional requirement as to height and weight in the physical examination of applicants has not yet become apparent for the reason that all certifications up to the present time have been made from the eligibles examined under the old rule, but the increase in the requirement of height from 5 feet 4 inches to 5 feet 6 inches, and as to weight from 125 to 135 pounds, it is believed will result in the selection of a class of men better fitted for the arduous duties of a railway postal clerk.

Protection of clerks.—The General Superintendent again invites attention to the need of some legislation for the protection of railway postal clerks while in the discharge of their duties. This matter has been presented a number of times in the recent annual reports. Ex-

perience has shown the need for the protection of clerks from assault while on duty, and it is hoped that Congress will take the needed action on this subject.

Second-class matter.—Last year 454,152,359 pounds of paid second-class mail matter were received from publishers, together with 34,094,544 pounds of matter carried within the county free of charge, making a total of 488,246,903 pounds. The work of inducing publishers to make separations of their publications to such extent as might be practicable has been continued with good results, which are apparent from the statistics that have been made up concerning some of the larger post-offices. The leading publishers appreciate that such separation is to their own interest as well as to that of the Department in facilitating the expeditious handling of the mail.

Improvements.—The new and improved service in lines of full railway postal cars or apartment cars during the past fiscal year was applied to 34,605 miles, which is considerably in excess of the record of any previous year. Additional car space has been provided on lines aggregating over 8,000 miles in length. New trains at a high rate of speed have been placed in operation on several of the trunk lines, furnishing greatly improved schedules for the movement of the mails, and by the extension of other lines new connections have developed for the more expeditious transmission of mails to and from important distant sections of the country.

Reorganization and reclassification.—The desirability for the reorganization and reclassification of the Railway Mail Service has been urged in the annual reports for a number of years past. While no general law has been enacted by Congress on this subject, much has been done in this direction in the various appropriation bills. The salaries of clerks of classes 4 ($1,200) and 5 ($1,400), which for many years were reduced by reason of restricted appropriations to amounts less than the maximum allowed by law, have been restored. A higher class (class 6, at $1,600 per annum) has been created for chief clerks and allowances have been made for their traveling expenses. A still higher class (class 7, at $1,800 per annum) has been established for assistant division superintendents and provision made for their traveling expenses. The salaries of division superintendents have been increased, fifteen days' annual leave has been granted to clerks performing daily service, provision has been made, as hereinbefore stated, to pay $1,000 to the families of clerks killed in the line of duty, and provision has been made for the promotion of clerks on the heavier apartment lines from $1,000 to $1,100 per annum and for the promotion of assistant chief clerks and a number of clerks on full railway post-office lines operating more than one car to a train from $1,200 to $1,300 per annum. These changes are greatly appreciated by the officers and clerks of the Railway Mail Service and have resulted in placing the service on a more just and equitable basis.

Registered pouches made up by railway postal clerks.—During the year a change was made in the distribution and dispatch of registered matter that will undoubtedly result in shortening the transit time of that class of matter without in any way affecting its security. The schemes for the distribution of registered matter have been changed so as to avoid the delays at exchange offices; that is, the matter heretofore inclosed in the through registered pouches is omitted, to a large extent, and forwarded as hand pieces. This naturally increases the volume of

registered matter handled on railway post-office lines, and in the case of the larger lines was liable to seriously interfere with other distribution; but the use of manifold bills, obviating the transcribing of registry records in transit, has helped, to a great extent, and the system of having through registered pouches made up by the clerks on the larger lines, which has been inaugurated during the past year, will also very much decrease this work.

Special equipment has been furnished for these exchanges and nearly all of the larger railway post-office lines are now pouching upon offices for which they have sufficient mail to justify the making up of a pouch.

The modification of the regulations so as to permit registered matter to be pouched direct between railway post-offices at junction points where it is impossible to secure a hand-to-hand exchange and where there is no opportunity to pass the matter through the junction post-office without involving considerable delay has resulted in expediting a large quantity of registered matter.

Expenditures and estimates.—The expenditure on account of officers, clerks, and other items of the Railway Mail Service during the fiscal year ended June 30, 1902, as reported by the Auditor under accounts stated to September 30, 1902, was $10,264,588.38; the appropriation was $10,374,700. This does not include railroad transportation or railway post-office cars.

The number of officials and clerks was 9,627.

Comparison with the previous year shows an increase of 522, or 5.73 per cent, in the number of officials and clerks, and of $585,551.64, or 6.05 per cent, in expenditures.

The appropriation for the current fiscal year is $11,282,540.

The sum estimated as necessary for the fiscal year ending June 30, 1904, is $12,132,000, being $849,460, or 7.53 per cent, more than the appropriation for the current fiscal year.

This estimate includes amounts as follows:

One general superintendent, at $3,500; 1 assistant general superintendent, at $3,000; 1 chief clerk, office of general superintendent, at $2,000; 1 assistant chief clerk, office of general superintendent, at $1,800; 11 division superintendents, at $2,700 each; 11 assistant division superintendents, at $1,800 each; 23 assistant superintendents, at $1,600 each; 120 chief clerks, at $1,600 each; 1,456 clerks, class 5, at not exceeding $1,400 each; 491 clerks, class 5, at not exceeding $1,300 each; 1,477 clerks, class 4, at not exceeding $1,200 each; 833 clerks, class 4, at not exceeding $1,100 each; 3,700 clerks, class 3, at not exceeding $1,000 each; 2,456 clerks, class 2, at not exceeding $900 each; 680 clerks, class 1, at not exceeding $800 each.

For substitutes for clerks on vacation, $42,000; provided that the Postmaster-General may allow railway postal clerks, whose duties require them to work six days or more per week, fifty-two weeks per year, an annual vacation of fifteen days with pay.

For acting clerks, in place of clerks injured while on duty, and to enable the Postmaster-General to pay the sum of $1,000 to the legal representatives of any railway postal clerk who shall be killed while on duty, or who, being injured while on duty, shall die within one year thereafter as the result of such injury, $75,000.

For actual and necessary expenses of General Superintendent, Assistant General Superintendent, chief clerk office of General Superintendent, assistant chief clerk office of General Superintendent, division

superintendents, assistant division superintendents, chief clerks, and railway postal clerks, while actually traveling on business of the Department and away from their several designated headquarters, $21,000.

For rent, light, fuel, telegraph, and miscellaneous office expenses, schedules of mail trains, telephone service, typewriting machines, and badges for railway postal clerks, $50,000.

For per diem allowance of assistant superintendents, $27,000. *Provided*, That assistant superintendents may receive a per diem allowance in lieu of actual and necessary traveling expenses at the rate of $4 per day while actually traveling on business of the Department and away from their several designated headquarters. Making in all, for Railway Mail Service, $12,132,000.

MAIL EQUIPMENT.

The amount appropriated for mail bags, with their appurtenances, and for the repair of mail-bag equipment during the fiscal year ended June 30, 1902, was $275,000; the amount expended $274,311.89, leaving an unexpended balance of $688.11. For details see tabular statement N.

The amount appropriated for mail locks, keys, etc., including repair of same was $43,000; amount expended $42,792.63, leaving an unexpended balance of $207.37. For details see Table O.

The amount appropriated for rent and maintenance of mail-bag and lock-repair shop was $8,500, out of which $8,422.58 was expended, leaving an unexpended balance of $77.42. For details see Table P.

Comparison of these accounts with those of the previous year shows an increased expenditure of $4,999.05 for mail bags, etc.; $2,340.99 for mail locks and keys, etc., and $158.72 for maintenance of repair shops, a total increase of $7,498.76, or 2.35 per cent.

The appropriations for the current fiscal year are the same as for last year.

The amounts estimated as necessary for the fiscal year ending June 30, 1904, are:

For mail bags, cord fasteners, label cases, and for labor and material necessary for repairing equipment	$280,000
For mail locks and keys, chains, tools, and machinery, and for labor and material necessary for repairing same	45,000
For rent of building for a mail bag repair shop, and lock repair shop, and for fuel, gas, watchmen, and charwoman, oil, and repair of machinery for said shops	9,200
Making a total of	334,200

being $5,000 more for mail bags, etc., $2,000 more for mail locks and keys, etc., and $700 more for rent and maintenance of the repair shop, making the sum of $7,700, or 2.35 per cent, more than the appropriations for the current fiscal year.

The number of bags of all kinds purchased during the last fiscal year was 122,294, at a cost of $98,003.16. The number of pouches and sacks made in the shop was 28,184; the number repaired, 1,543,867, and the number condemned as unfit for service, 60,099. For details see Table Q.

The number of pouches and sacks handled in the Washington, D. C., mail-bag storehouse was 7,191,946, and at the eight division depositories, 23,100,155.

Contracts for miscellaneous supplies.— Table M shows the contracts

made last year pursuant to advertisement, for supplies to be furnished during the current fiscal year, as well as for contracts for similar articles furnished during the last fiscal year.

Number of mail bags in use.—Hereto attached and marked Table X is a detailed statement showing the numbers of the various sizes and kinds of mail pouches and sacks estimated to have been in the postal service at the close of business June 30, 1902, from which it appears that there were 88,135 more bags in the service on June 30, 1902, than were available for use on the corresponding date of 1901, the total number on June 30, 1902, being 1,303,687.

Mail pouches condemned.—The number of pouches retired from the service last year as unfitted for further use was 35,045, of which 28,988 were heavy all-leather pouches. The available parts of these leather pouches were converted into horseback pouches for use in mountainous and other sections of country where the mails are necessarily carried by mail carriers on horseback. Thirteen thousand three hundred and thirty-eight of these horseback pouches have already been made from the old material.

Improvised mail pouches.—By reason of the unnecessary detention of surplus pouches at post-offices or in transit, it became necessary during the year on two or three occasions to improvise mail pouches from No. 1 sacks by attaching thereto a contrivance by which the sack could be fastened with a mail lock. These bags were fitted up for immediate delivery and were intended for temporary use only; and although the first thousand were issued nearly a year ago, only about one-half has been turned back to the storehouse.

No. 5 C pouches.—This style of mail pouch, which was fully described in the report of this office for 1900, and which was so well received upon its introduction by those engaged in the handling of mails, is now being used in large quantities to take the place of Nos. 3 and 4 pouches, and in some cases it has displaced the No. 2, which is the largest pouch now in use in the service. The No. 5 C pouch was designed by subordinates of this office, who are also entitled to credit for other improvements in mail equipment made in recent years. This pouch is found to be much more convenient than those of the old style in handling small quantities of mail and is less than one-half the size and weight of the smallest of the three sizes mentioned above. Eleven thousand six hundred and seventy of the No. 5 C pouches were made at the mail bag repair shop during the last fiscal year.

Distinctive equipment for the Philippine Islands.—During last year this office furnished the Philippine Islands postal administration with a large quantity of distinctive mail equipment, consisting of 400 No. 2 pouches, 200 No. 3 pouches, 4,000 No. 1 sacks, 500 No. 2 sacks, 100 No. 3 inner-registered sacks, and 400 No. 1 foreign canvas sacks; which were all made in our mail bag repair shop. Also 400 ordinary locks, 100 street letter box locks, 200 rotary locks, 200 ordinary mail keys, 25 street letter box keys, 25 rotary lock keys, and 250 key chains, all of which articles, with the exception of the key chains, were turned out by our mail lock repair shop. The articles mentioned above were billed to the Philippine administration at cost price, with a slight percentage added to cover wear and tear of machinery, etc., the total amount being $6,287.05. Payment was made therefor in United States mail equipment.

Waste material.—Waste material, consisting of scrap iron, steel,

brass, and phosphor-bronze from the lock shop, and cotton duck, leather, and other material which had accumulated in the bag shop during last year, and which could not be used for any other purpose in the manufacture or repair of mail equipment, was disposed of under advertisement to the highest bidders. The proceeds, amounting to $9,510.38, was covered into the Treasury as required by law.

Mail equipment by freight.—The transportation of mail equipment by freight in carload lots from Western depositories (where it is gathered in as surplusage not needed for use in that section of country) to New York, where it is always in demand, was continued during the year. The results were more satisfactory than heretofore for the reason that shipments were so timed as to cause deliveries to be made at destination at regular intervals and before the stock on hand became exhausted.

Mail-lock repair shop.—There were 22,329 Eagle mail locks manufactured last year in the mail-lock repair shop, making the total number estimated to be in use and reserve on June 30, 1902, as 534,561. In addition to the manufacture of these locks and the repair of old ones, the mail-lock repair shop made many other locking devices of different designs and combinations for the street letter-box and other service, together with all the metal work needed by the mail-bag repair shop for new equipment, as well as for repairing purposes, and also made all of the fastening devices for new equipment under contract.

Addition to steam plant.—In the early part of last fiscal year it became necessary to replace the old 80-horsepower engine, used in running the machinery in both the mail-bag and mail-lock repair shops, at an estimated expense of at least $1,200, but through the courtesy of the Secretary of the Interior a comparatively new Harris' Corliss engine of suitable horsepower, then in use in the basement of the old Post-Office Department building, which had been turned over to the Department of the Interior, was transferred to this office for the use of the mail equipment shops, where it was duly installed, and, in connection with a new 80-horsepower tubular boiler, is now performing excellent service and rendering the power plant complete.

New building for mail equipment shop.—I beg to again renew my recommendation for a new and suitable building for the manufacture and repair of mail equipment. Although in part a repetition, I will state that since 1888 this Department has occupied the premises known as Nos. 479–481 C street NW., this city, for the manufacture, repair, and storage of mail equipment. This building was constructed for use as a carriage repository. It is five stories in height, without basement or cellar, and contains about 34,000 square feet of floor space, for which a rental of $5,000 per annum is paid. In this structure more than 250 men and women are employed in the manufacture and repair of articles used in the mail service, and in which much space is occupied by the steam plant, coal bins, metal, canvas, and leather working machinery, as well as the heavy equipment which necessarily accumulates. More space and better facilities are needed. More space must be found in the near future for the proper handling and storage of a reserve stock of pouches and sacks than is now provided, as the condition of the postal business imperatively demands that a much larger stock of pouches be carried in the storehouse at all times than there is now room to accommodate. At this time there is comparatively no surplus stock of pouches in the United States mail service.

Under this condition of affairs it is at times necessary to curtail one requisition in order to meet another. The stock of pouches in the service must be kept down to the lowest possible limit, as there is not sufficient space in the present building to handle or store more than a few days' supply. If by reason of the stoppage of train service or from any other cause the usual quantity of equipment coming into our shops should be retarded for but three or four days, the obstruction would serve to entirely exhaust the small stock on hand, and at the same time contract the quantity of serviceable equipment to such an extent as to create a stringency at points where it would be required for immediate use. Such danger would be avoided if sufficient space were provided for the storage of a comparatively small reserve stock of pouches with which to meet emergencies, and which we are now unable to accumulate for lack of sufficient storage room in the present overcrowded building.

Therefore, I again recommend that Congressional action be taken for the erection of a suitable building to contain at least 45,000 square feet of floor space for manufacturing, repairing, and storing mail equipment, to be located at some suitable point in the city of Washington.

DIVISION OF INSPECTION.

This division is charged with the important duty of enforcing the proper performance of mail service for which the Department has contracted. To this end regular reports at frequent intervals are received from postmasters and other employees along the routes over which the mails are carried. Where failures or irregularities appear, such action is taken as may be required to correct them. Deductions are made from the pay of contractors, not as a source of revenue to the Department, but for the purpose of securing efficient service for the public.

The brief statement given below as to the deductions, fines, and remissions conveys no adequate idea of the importance of the results accomplished by the division of inspection.

Gross amount of deductions and fines from the pay of postal contractors and others during the fiscal year ended June 30, 1902		$239,771.60
Amount of remissions on deductions on account of satisfactory explanation	$22,758.34	
Amount of remissions on fines	4,001.13	
		26,759.47
Net amount of deductions and fines under orders issued during fiscal year ended June 30, 1902		213,012.13

The above amounts are classified as follows:

Service.	Deductions and fines.	Remissions.	Net deductions and fines.
Star	$102,160.48	$22,472.73	$79,687.75
Steamboat	25,261.59	2,551.09	22,710.50
Railroad	94,064.54	1,005.43	93,059.11
Mail-messenger	2,415.84	40.76	2,375.08
Electric and cable car	1,787.20	25.42	1,761.78
Regulation, screen, or other wagon	10,026.11	607.25	9,418.86
Pneumatic-tube	20.00		20.00
Railway mail	4,035.84	56.79	3,979.05
Total	239,771.60	26,759.47	213,012.13

FOREIGN MAILS.

The details of the foreign-mail service are given in the report of the superintendent of foreign mails to this office, to which attention is invited.

The net cost of the transportation of foreign mails during the fiscal year ended June 30, 1902, was distributed as follows:

Trans-Atlantic service		$1,116,178.93
Trans-Pacific service		428,604.09
Miscellaneous service		536,725.86
Panama Railroad Company		30,427.40
Sea post service		30,572.44
Steamboat transfer service, New York		38,000.00
Miscellaneous items, telegrams, etc		1,998.34
Sea conveyance from the United States of closed mail of foreign origin		93,400.37
Paid to foreign countries for the intermediary maritime and extraordinary land transit of mails of United States origin, including parcels-post transit from Panama to Valparaiso		54,970.97
Paid for intermediary ordinary territorial transit of mails of United States origin		137,462.22
Expenses of the United States postal agency at Shanghai		3,632.13
For this Department's share in maintaining the International Bureau at Berne, Switzerland, including subscription to the journal L'Union Postale and the Universal Dictionary of Post-Offices		1,014.22
Making the aggregate cost of the service		2,472,986.97
Less amount received for the intermediary maritime transit of mails of foreign origin, including transit on British closed mails from San Francisco to the Australasian colonies	$129,704.39	
For the intermediary extraordinary land transit of mails of foreign origin	94,321.00	
Receipts at the United States postal agency at Shanghai for postage stamps sold and postage and box rents collected	3,336.03	
		227,361.42
Net cost of the service		2,245,625.55

The appropriations for the last fiscal year were $2,549,000 for transportation and $155,000 for balances due foreign countries. The amounts expended, as shown by the Auditor's report under accounts stated to September 30, 1902, were $2,268,690.75 and $141,782.07.

The appropriations for the current fiscal year are $2,587,000 for transportation and $160,000 for balances due foreign countries.

The amounts estimated as necessary for the fiscal year ending June 30, 1904, are:

For transportation	$2,566,000
For balances due foreign countries	165,000
For the expenses of the United States delegates to the Universal Postal Congress to convene in Rome, Italy	5,000
Total	2,736,000

being $11,000, or 0.40 per cent less than the appropriation for the current fiscal year.

Ocean mail contracts. The contract for service upon route No. 36, New York to La Guaira, expired on February 28, 1902, and was replaced by two contracts, as follows: Route No. 36, from New York to Puerto Cabello, Venezuela, calling at San Juan, Curaçao, and La Guaira, once every two weeks, in vessels of the third class, and route No. 37, from New York to Maracaibo, Venezuela, calling at La Guaira

and Curaçao, once every two weeks, in vessels of the fourth class. Both of these new contracts were awarded to Boulton, Bliss & Dallett (Red D Line), who had performed the service under the previous contract, the new contracts being for a period of ten years from March 1, 1902. The contract which expired February 28, 1902, provided for service to Venezuela three times a month. The new contracts contemplate service to Venezuela once a week, and to Porto Rico once every two weeks. There are now seven routes under contract for ocean mail service, the annual rate of expenditure for which is $1,475,138.

Parcels post.—The parcels-post convention of the Republic of Bolivia was ratified January 9 and became operative on February 1, 1902. The weight of the parcels-post mails dispatched from the United States during the last fiscal year was 322,615 pounds, an increase over the weight dispatched during the preceding fiscal year of 69,824 pounds, or 27.62 per cent. The number of parcels dispatched during the last fiscal year was 93,095, the average weight of which was 3½ pounds. The weight of the parcels-post mails received during the last fiscal year was 399,887 pounds, and consisted of 56,820 parcels, the average weight of which was 7 pounds.

Of the total weight of 322,615 pounds dispatched, 65,616 pounds were for Germany, consisting of 24,694 parcels. In return we received from Germany 44,952 parcels, their weight being 339,348 pounds.

From statistics during the months of April and May last it appears that of the parcels received from Germany more than 35 per cent are delivered in the city of New York; more than 48½ per cent in the cities of New York, Brooklyn, Jersey City, Hoboken, Boston, Philadelphia, Baltimore, and Washington; and that more than 72½ per cent are delivered east of the Mississippi River.

The parcels-post convention with Germany was in the nature of an experiment, being the first convention concluded with any of the principal countries of Europe. It has now been in full operation three years, sufficiently long to enable the Department to determine whether it should be continued in force, modified, or terminated after six months' notice. If found to be working satisfactorily, there seems to be no good reason why similar conventions should not be concluded with other countries of Europe, several of which have long been desirous of negotiating such conventions.

From the statistics referred to above it appears that the average weight of parcels dispatched from this country to all countries only slightly exceeds 3½ pounds. The average weight of parcels dispatched from this country to Germany is 2¾ pounds. The domestic postal service of this country does not permit the introduction of parcels heavier than 4 pounds in weight; therefore, in view of the fact that 4 pounds, as a limit of weight, will fairly meet the requirements of this country, I recommend the tender of parcels-post conventions with England, France, Italy, and other countries of Europe, similar to that now in force between this country and Germany, with the exception that the weight of parcels be limited to 4 pounds; and further recommend that six months' notice be given Germany of the desire of this country to modify the existing convention so as to reduce the weight of parcels from 11 to 4 pounds. If promptly negotiated, these conventions with other countries of Europe might have a years' test in practical operation before the Universal Congress convenes in Rome in 1904, at which time the delegates from this country would be prepared to discuss the subject more intelligently.

Postal Union reply envelope.—Another matter which is certain to come before the congress which is to convene in Rome in 1904, is the subject of a universal stamp or some substitute for it which will facilitate international correspondence. Several countries of the Postal Union have within the past year addressed communications to this country, notably the Netherlands and France, suggesting each a different form of prepaid reply missive. These communications have been referred to this office for consideration, and have induced me to give some thought to the subject. Several objectionable features can be named against the successful practical operation of the universal postage stamp, and, as well, against any reply missive which depends for its prepaid postage on the use of a stamp printed and sold in another country. Every country is disposed to jealously guard its right to receive cash in advance for the service it undertakes to perform in mailing a letter, especially when that service may involve the payment of cash to an intermediary as a transit charge for conveyance.

I suggest a plan which requires that every reply letter shall have upon it the stamp of the country in which it is mailed, and yet a stamp that may be conveniently paid for in the country which has invited the reply.

I recommend that one or more countries of the Postal Union be requested to enter into agreement with the United States to test this plan in advance of the meeting of the postal congress in 1904 as follows:

Each country to prepare and sell special Government envelopes of light weight and good quality, to be entitled "international reply postage envelopes," to be sold for 10 cents, or 50 centimes, each, having one 5-cent stamp, or its equivalent, embossed on the upper right-hand corner, to be canceled when mailed, and a similar stamp on the left of the envelope to remain uncanceled, the first-named stamp to pay outward postage, half-ounce weight, the last-named to render the envelope, when relieved of its inclosure, good for the purchase of a reply stamp of like value at any post-office in the country of destination, postmasters to be instructed to take credit for these envelopes in their stamp account and to forward them to the central office to be redeemed for cash by the country of origin in accounts between the two countries. The practice which has long prevailed in this country of exchanging for stamps of like value Government envelopes which have been spoiled in addressing or otherwise suggests administrative details which need not be referred to here, but which are entirely practicable.

It is believed that the use of these envelopes would greatly stimulate international correspondence, fully protect the revenues of the several countries, and be found a very great convenience to an ever-increasing number of people who desire to prepay replies to correspondence.

Sea post-offices.—International sea post-offices have been in continuous operation upon the steamers of the International Navigation Company, also upon the steamers of the North German Lloyd Steamship Company and the Hamburg-American Line. During the year covered by this report the steamers of the International Navigation Company made 45 trips from New York and 46 from Southampton; the steamers of the German lines, 54 trips from New York and 56 trips from Germany. Very heavy mails continue to be dispatched by steamers under contract with the British Government, on which we

have not been able to secure as yet, by mutual agreement, sea post-offices. The benefits of the sea post service are becoming every year more apparent and fully justify, in the judgment of this office, the expense connected therewith. It is very desirable, however, to secure the cooperation of Great Britain in extending the service to steamers under contract with that Government.

I recommend that, in connection with other matters pending between the two Governments, the desirability of establishing sea post service on English steamers be kept prominently before the postal administration of Great Britain.

EXPENDITURES, APPROPRIATIONS, AND ESTIMATES.

The following statement shows the expenditures for the past fiscal year, as reported by the Auditor for the Post-Office Department under accounts stated to September 30, 1902, the appropriation for the current fiscal year, and the estimate of amount required for the next fiscal year for each item of service:

Items.	Expenditures for fiscal year ended June 30, 1902.	Appropriations for fiscal year ending June 30, 1903.	Estimate for fiscal year ending June 30, 1904.
Star service, including special offices	$5,725,531.00	$6,715,000.00	$6,960,000.00
Steamboat service	563,062.75	641,000.00	693,000.00
Railroad transportation	34,700,000.00	36,260,000.00	38,242,000.00
Railway post-office cars	4,657,368.57	5,104,960.00	5,411,000.00
Railway Mail Service	10,264,588.38	11,282,540.00	12,132,000.00
Mail-messenger service	1,025,245.50	1,083,000.00	1,160,000.00
Electric and cable car service	389,987.61	450,000.00	510,000.00
Wagon service in cities	788,423.59	875,000.00	990,000.00
Pneumatic-tube service		500,000.00	800,000.00
Necessary and special facilities on trunk lines	150,319.13	167,728.75	
Mail equipments	324,444.13	326,500.00	334,200.00
Miscellaneous items, Office of Second Assistant Postmaster-General	997.65	1,000.00	1,000.00
Total inland service	58,589,968.31	63,406,728.75	67,233,200.00
Foreign mail transportation	2,268,690.75	2,587,000.00	2,566,000.00
Balance due foreign countries	141,782.07	160,000.00	170,000.00
Aggregate	61,000,441.13	66,153,728.75	69,969,200.00

INCREASE IN EXPENDITURES FOR MAIL TRANSPORTATION.

The following table shows the aggregate expenditures for all items under the supervision of this office (including foreign mails) by fiscal years from 1888 to 1902, inclusive, the increase in amount, and the per cent of increase for each year over the preceding year:

Year.	Expenditures.	Increased expenditure over preceding year.	Per cent.
1888	$30,393,209.53	$1,647,064.97	5.72
1889	33,506,648.73	3,113,439.20	10.24
1890	35,246,162.89	1,739,514.16	5.19
1891	38,039,584.78	2,793,421.89	7.92
1892	40,358,432.04	2,318,847.26	6.09
1893	42,904,593.38	2,546,161.34	6.30
1894	44,920,033.64	2,015,440.26	4.69
1895	45,716,380.33	796,346.69	1.77
1896	47,894,486.56	2,178,106.23	4.76
1897	49,897,992.32	2,003,505.76	4.18
1898	52,319,790.86	2,421,798.54	4.85
1899	53,945,796.89	1,626,006.03	3.11
1900	[a]56,374,206.49	2,428,409.60	4.50
1901	[a]58,253,971.00	1,879,764.51	3.33
1902	[a]61,000,441.13	2,746,470.13	4.71

[a] Under accounts stated to September 30, 1902.

The aggregate of the appropriations for this office for the current fiscal year is $66,153,728.75, being $4,458,290, or 7.22 per cent, more than for 1902.

The estimate for the fiscal year ending June 30, 1904, is $69,969,200, being $3,815,471.25, or 5.76 per cent more, than the appropriations for the current fiscal year.

TABLES APPENDED.

Accompanying this report and as a part thereof are 24 tabulated statements, which contain in a concise form a great deal of information and interesting matter relating to mail transportation. They are briefly described as follows:

TABLE A.—Comparison between the annual rates of expenditure at the close of the two preceding years, the appropriation for the current year, and the estimate for next year.

TABLE B.—Statements showing, by States and contract sections, the length of routes, annual rate of expenditure, and distance traveled in each class of service.

TABLE C.—All railroad and railway post-office car service in operation, shown in detail by States and routes.

TABLE D.—All steamboat service in operation, shown by States and routes.

TABLE E.—Regulation, screen, or other wagon service, in detail, by States and routes.

TABLE F.—All electric and cable car service in operation June 30, 1902.

TABLE G.—Statement of service by classes, showing the extent of service in operation June 30, 1901 and 1902, respectively, the increase or decrease, and the percentage of increase or decrease.

TABLE H.—Statement of weights of mails, speed, accommodations for mails, pay, etc., on railroad routes on which the pay was readjusted.

TABLE I.—Statistics of railroad mail service from 1836 to 1902.

TABLE K.—Increases and decreases in each class of service, by States.

TABLE L.—Statement showing deductions and fines imposed and remissions made on pay of contractors.

TABLE M.—Statement of contracts for mail equipments made or in effect during last fiscal year.

TABLE N.—Itemized statement of the number, prices, and cost of all mail bags, and the cost of wages, cotton canvas, leather, and other material paid for last year out of the appropriation for mail bags, etc.

TABLE O.—Expenditures for mail locks and keys, etc.

TABLE P.—Expenditures for repair shop for mail equipment.

TABLE Q.—Number and kind of bags purchased, made, repaired, and condemned in the equipment shop.

TABLE R.—Itemized statement of work done in the mail-lock shop in 1902 as compared with previous year.

TABLE S.—Expenditures for mail bags, 1877 to 1902, compared with growth of the service as indicated by other statistics.

TABLE T.—Mail bags received at and issued from the mail-bag storehouse in this city during 1902.

TABLE U.—Mail bags repaired and condemned, 1890 to 1902.

TABLE V.—Mail bags and locks issued by the mail-bag depository at New York during 1902.

TABLE W.—Mail equipment issued by the eight grand depository offices during 1902.

TABLE X.—Mail pouches and sacks in service June 30, 1902.

TABLE Y.—Statement of condemned material sold.

In submitting this, my sixth annual report, I desire to speak even more appreciatively than ever before of the officers and clerks, my associates in this office. As I become more familiar with the details, I can the better appreciate the character and quality of the work they do. Much overtime has been cheerfully given by many clerks. The rapid growth of the service has made it difficult to estimate for necessary

clerical force a year in advance. The aim of this office is to simplify and save work rather than to largely increase the clerical force. My efforts in this direction have been heartily seconded by the chief clerk and division chiefs.

Very respectfully,

W. S. SHALLENBERGER,
Second Assistant Postmaster-General.

Hon. H. C. PAYNE,
Postmaster-General.

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REPORT OF THE THIRD ASSISTANT POSTMASTER-GENERAL.

POST-OFFICE DEPARTMENT,
OFFICE OF THIRD ASSISTANT POSTMASTER-GENERAL,
Washington, D. C., November 12, 1902.

SIR: I have the honor to submit the following report for the fiscal year ended June 30, 1902. The postal subjects within the jurisdiction of this Bureau are—

First. The financial system, involving the receipt and disposal of all moneys coming directly to the Department, the collection of all moneys due the Department, the payment, by warrant or draft, of accounts chargeable against appropriations for the postal service, the designation of depositories for postal funds, and the supervision and instruction of all postmasters relative to the disposition of the postal revenue from whatever source.

Second. The supervision and collection of postal revenue through the issue of stamped paper of all kinds, the keeping of postmasters' accounts, and the redemption of spoiled or damaged stamped paper.

Third. The classification of domestic mail matter, involving the determination of the admissibility of publications to the second class of mail matter, the supervision of those therein, the keeping of the necessary records in connection therewith, and the instruction of postmasters relative thereto.

Fourth. The use of penalty envelopes and the franking privilege.

Fifth. The supervision of proposals and letting of contracts for furnishing the Department with postage stamps and stamp books, stamped envelopes and newspaper wrappers, registered-package, tag, official, and dead-letter envelopes, envelopes for the use of the several Executive Departments, and postal cards.

Sixth. The registry system, involving the supervision of the registered-mail service and the record forms used therein, the establishment and control of all registered-pouch exchanges, and the instruction of all postal officers relative thereto.

DIVISION OF POSTAL FINANCE.

FINANCIAL STATEMENT—POSTAL SERVICE.

The postal revenue for the year and the total actual expenditures are as follows:

Ordinary postal revenue, consisting of—		
Sales of postage stamps, stamped envelopes, newspaper wrappers, and postal cards		$112,187,120.41
Second-class postage (pound rate) paid in money		4,541,523.59
Receipts from box rents		2,992,085.04
Letter postage paid in money (made up principally of balances due from foreign administrations)		123,017.18
Miscellaneous receipts		50,242.58
Fines and penalties		45,810.81
Receipts from unclaimed dead letters		18,429.79
Total ordinary postal revenue		119,958,229.40
Receipts from money-order business		1,889,817.86
Total receipts from all sources		121,848,047.26
Expenditures:		
Actual amount of expenditures for the service of the year ended June 30, 1902 (which includes all the expenditures made on account of the year up to three months after its close)	$124,392,472.02	
Expenditures during the year on account of previous years	393,225.05	
		124,785,697.07
Excess of expenditures over receipts		2,937,649.81

The outstanding liabilities at the close of the year and the cost of transporting the mails over the subsidized Pacific railroads that have not yet settled their bonded accounts with the Government (the latter item amounting to $593,740.41) are not included in the foregoing statement.

The following comparisons with the totals of the preceding year are presented:

Total receipts for 1902	$121,848,047.26
Total receipts for 1901	111,631,193.39
Increase for 1902	10,216,853.87
Per cent of increase	9.1
Total expenditures for 1902	124,785,697.07
Total expenditures for 1901	115,554,920.87
Increase for 1902	9,230,776.20
Per cent of increase	7.9
Total deficiency for 1901	3,923,727.48
Total deficiency for 1902	2,937,649.81
Decrease of deficiency for 1902	986,077.67
Per cent of decrease	25.1

Detailed statements of postal receipts and expenditures, by items, will be found in Tables Nos. 2, 3, and 4, pages 603, 605, and 606 of this report.

COMPARISON OF POSTAL REVENUE AND EXPENDITURES.

Table No. 6, page 612 of this report, gives a statement by quarters of the postal receipts and expenditures, increase of receipts and expenditures, and per cent of increase of receipts and expenditures from 1883, the last fiscal year during which the Postal Service was self-sustaining, to and including the year covered by this report.

The average yearly receipts for the first sixteen years since 1883 were $66,402,949.80, while the average yearly expenditures during the same period were $73,424,890.09, showing an average yearly excess of expenditures over receipts during that time of $7,021,940.29, or 10.57 per cent.

The average yearly receipts for the last three of the nineteen years since the Postal Service was self-sustaining, during which time attention has been given to the correction of abuses in the second class of mail matter, were $111,944,606.64, while the average yearly expenditures during the same period were $116,026,961.97, showing an average yearly excess of expenditures over receipts during that time of $4,082,355.33, or 3.64 per cent.

The average increase in receipts each year over the preceding year for the first sixteen years since 1883 was $3,100,793.22, or 4.8 per cent, while the average increase in expenditures each year over the preceding year during the same period was $3,646,826.03, or 5.5 per cent.

The average increase in receipts each year over the preceding year for the last three fiscal years was $8,942,221.03, or 8.64 per cent, while the average increase in expenditures each year over the preceding year during the same period was $7,717,845.38, or 6.67 per cent.

The comparatively large average yearly increase in postal receipts during the last three years shows, to some extent, the result of continual efforts during those years to correct the abuses of the second-class mailing privilege.

It will be seen from Tables Nos. 4 and 6 that the total expenditures on account of the Postal Service during the last fiscal year, including expenditures on account of previous years, was $124,785,697.07, and the total postal revenue from all sources was $121,848,047.26, showing a total deficiency during the year of $2,937,649.81. When the loss sustained during the year by bad debts, etc., $23,520.10, is added to this deficiency, the gross loss to the Government during the year aggregates $2,961,169.91.

The total amount expended for the year on account of rural free-delivery service was $3,993,706.51, or nearly four millions of dollars. This exceeded the total deficiency by $1,056,056.70 and the aggregate loss from all sources during the year by $1,032,536.60.

It will be seen that had it not been for this large expenditure on account of rural free-delivery sevice, the receipts would have exceeded the expenditures by upward of $1,000,000.

LOSSES BY BURGLARY, FIRE, BAD DEBTS, AND COMPROMISES.

During the year, in cases of loss by burglary and fire where compromises with debtors were found to be necessary, and in others where outstanding debts could not be collected, the Department suffered

losses amounting altogether to $23,520.10, a decrease of $34,273.13 from the corresponding loss suffered last year, or 59.3 per cent.

AMOUNTS DRAWN FROM THE TREASURY.

The following amounts were drawn from the General Treasury within the last fiscal year on account of special and deficiency appropriations, viz:

For deficiency in the postal revenue:	
For 1899 and prior years	$8,845.86
For 1900	450,000.00
For 1902	2,000,000.00
Total	2,458,845.86

TRANSACTIONS AT TREASURY DEPOSITORIES.

The account during the year shows the following receipts and disbursements at Treasury depositories, viz:

Amount of outstanding warrants June 30, 1901		$341,389.36
Balance subject to draft June 30, 1901		9,621,517.09
Counter entry of receipt on account of year June 30, 1901		1,500.00
Net balance subject to draft June 30, 1901		9,620,017.09
Deposits:		
On account of postal revenue	$52,642,620.50	
On account of grants from the General Treasury	2,458,845.86	
		55,101,466.36
Total		64,721,483.45
Amount of warrants paid during the year ended June 30, 1902		54,619,964.16
Balance at depositories		10,101,519.29
Amount of outstanding warrants June 30, 1902		320,698.61
Balance subject to draft June 30, 1902		9,780,820.68

Of the $55,101,466.36 deposited on account of postal revenue, $30,381.55 came through national-bank depositories. The balance remaining in national-bank depositories at the close of the year was $11,721.90. Table No. 5, page 610, shows the receipts and disbursements at Treasury depositories during the year compared with those of the previous fiscal year.

The operations of the Division of Postal Finance during the year will appear from the following statement:

The number of accounts of contractors and other creditors of the Government on account of mail service received and examined was 190,960, requiring the recording, drawing, and mailing of the same number of warrants. The total amount covered by these warrants was $54,599,273.41; the number of drafts drawn on account of balances due present and late postmasters was 4,832, amounting to $1,177,279.18, making a total amount covered by warrants and drafts of $55,776,552.59. The number of new contracts for mail service received, examined, and entered in books kept in this division was 8,629, and the number of orders of the Postmaster-General affecting the mail service, entered in ledgers, was 35,922.

During the fiscal year ended June 30, 1900, upward of 10 per cent of the work incident to issuing warrants was on account of rural free-delivery service, while during the fiscal year ended June 30, 1901, 20 per cent of the warrants issued was on that account, an increase of 100 per cent over the preceding year; but the salaries of rural free-delivery carriers for the last six months of the fiscal year ended June 30, 1902, were paid by the postmasters at the largest post-offices in the respective States in which the service was performed. This division has therefore been relieved from issuing a large number of warrants during five of the six months mentioned, which will doubtless result in a decrease during the fiscal year ending June 30, 1903, as compared with the number issued during the year covered by this report.

Transcripts were received weekly from the United States Treasury and 9 subtreasuries, and monthly from 54 designated national-bank depositories, with which accounts are kept, comprehending financial transactions aggregating $60,528,339.

About 20,000 circulars were sent to postmasters, containing instructions relative to the deposit of their postal balances.

The number of letters written on the subject of postal finance was 4,514, and the number of cases for investigation of the accounts of present and late postmasters made up and placed in the hands of the Fourth Assistant Postmaster-General (division of post-office inspectors and mail depredations) was 260.

FUNDS RECEIVED AT THE DEPARTMENT AND TURNED OVER TO THE DIVISION OF POSTAL FINANCE DURING THE YEAR.

The money received from postmasters erroneously remitting to this office balances due the Government, from collections made by the Chief Post-Office Inspector on account of defaulting postmasters and the recovery of postal remittances lost in transit, from stamp collectors and others for the purchase of stamps, stamped envelopes, etc., and from bills of exchange covering balances due by foreign postal administrations amounted to $94,810.86, the disposition of which was as follows:

Amount received	$94,810.86
Amount deposited with the Treasurer of the United States at Washington, D. C	25,610.77
Amount deposited with the Assistant Treasurer of the United States at New York, N. Y	68,351.45
Amount returned to remitters	174.39
Amount used in the purchase of stamps, stamped envelopes, and postal cards which were sent to the persons ordering them	56.15
Amount turned over to the postmaster at Washington, D. C	611.10
Amount turned over to the Fourth Assistant Postmaster-General	7.00
Total	94,810.86

DEAD-LETTER FUND.

The money taken from dead letters for which no owners could be found, and that realized from the auction sale of unclaimed articles accumulated in the Dead-Letter Office, aggregated $18,458.83.

This money was disposed of as follows:

Amount received	$18,458.83
Amount in current funds deposited in the Treasury at Washington, D. C.	17,875.31
Amount realized from the sale of foreign and uncurrent funds by the postmaster at New York and deposited with the Assistant Treasurer at New York	554.48
Total amount deposited	18,429.79
Amount of loss sustained in the sale of uncurrent funds, from counterfeits and from mutilated minor coin	29.04
Total	18,458.83

APPROPRIATIONS, EXPENDITURES, AND ESTIMATES FOR THE POSTAL SERVICE COMING UNDER THE THIRD ASSISTANT POSTMASTER-GENERAL.

The specific appropriations for the postal service coming under the control of this office during the year (see Table No. 2) amounted to $1,970,800, and the expenditures out of these appropriations to $1,804,177.79, leaving an unexpended balance of $166,622.21. These figures include appropriations and expenditures for special-delivery business, which has been transferred to the Office of the First Assistant Postmaster-General. There are unexpended balances in each item of the appropriations.

The estimates of appropriations for the service coming under control of this office during the coming fiscal year, ending June 30, 1904, amount to $1,607,000, which is $548,000 less than the appropriations for the year ending June 30, 1903. This decrease is due to the fact that these estimates do not include any appropriations for the special-delivery service. Details of these estimates will be found in statement No. 1, on page 600 of this report.

DIVISION OF POSTAGE-STAMP SUPPLIES.

The total number of pieces of stamped paper issued to postmasters during the fiscal year was 6,054,362,853; value, $112,594,620.72; an increase over the previous year of 353,329,567, or 6.19 per cent, and in value of $7,855,618.23, or 7.5 per cent. To these stamp supplies should be added 7,093,274 stamp books, the selling price of which over the value of the stamps contained therein was $70,932.74, making the total number of pieces of stamped paper and stamp books issued to postmasters 6,061,456,127; value, $112,665,553.46; an increase over last year of 355,724,418 articles, or 6.23 per cent, and of $7,879,566.74, or 7.52 per cent.

In detail these issues and their comparative volume and value with those of the previous year are found in tables Nos. 7 to 9, pages 617 to 619, in this report.

ORDINARY AND SPECIAL-REQUEST STAMPED ENVELOPES.

Of the 853,128,000 stamped envelopes issued, 308,066,000, or 36.22 per cent, were "ordinary," and 545,062,000, or 63.88 per cent, were "special-request" with printed return cards.

All of the special-request and 228,784,250, or 74.27 per cent, of the ordinary stamped envelopes were issued from the main agency at Hart-

ford, Conn.; 79,281,750, or 25.73 per cent, of the ordinary envelopes were issued from the subagency at St. Louis, Mo.

VALUE OF STAMPED ENVELOPES OVER COST.

The gross selling value of stamped envelopes and newspaper wrappers issued to postmasters was $17,029,799.56, and their postage value was $15,947,202.50, leaving $1,082,597.06 to defray cost of manufacture and distribution. The contract cost, with $5.88 deducted for misprints, was $622,256.80, leaving $460,340.26 to defray the expense of distribution, in contrast to $386,187.20 for the previous year.

OFFICIAL AND REGISTERED PACKAGE ENVELOPES.

The total number of official and registered package envelopes issued during the year was 104,121,073, an increase of 10.8 per cent over last year; contract cost $126,649.85. Of the number issued, 19,672,773 were registered-package and tag envelopes, and the remaining 84,448,300 were "penalty" envelopes used for carrying communications for the postal service.

BOOKS OF STAMPS.

The issue of stamp books increased nearly 51 per cent over that of the previous year, showing that the books attain greater popularity as the public becomes more familiar with them. Deducting the cost of manufacture of the books, $27,529.82, from the selling price of the books over the value of the stamps contained therein, $70,932.74, the net profit to the Department in their sale is found to be $43,402.92.

During the summer of 1902 numerous complaints were made to the Department of the adhesion of stamps to the paraffin paper in these books, due to the unusual humidity of the season and the use by the manufacturer of paraffin paper which was found to be insufficiently waxed. On June 26, 1902, all postmasters were directed to redeem from purchasers all stamp books in which the stamps had so adhered, and to send them to the Department with any similar books held in stock. All such stamp books were exchanged by the manufacturer, who immediately secured a more heavily paraffined paper for use in subsequent issues. In this regard there are now no complaints.

STAMPED LETTER-SHEET ENVELOPES.

The sale of letter sheets was discontinued January 1, 1902, when the postmaster at New Orleans, which was the only post-office having them on sale, was directed to return his unsold stock to the Department for destruction. The number of letter sheets sold during the fiscal year up to their withdrawal was 2,100.

FREIGHT SHIPMENTS.

In addition to the envelopes furnished postmasters by mail, 19 carloads were shipped by freight to the four largest cities, and 21 carloads shipped during the year to the St. Louis subagency for distribution to postmasters by mail, making a total of 40 carloads dispatched, containing 143,616,000 envelopes, which weighed 1,374,537 pounds.

Thirty carloads of postal cards, in addition to those issued by mail, were shipped by freight from the manufactory to postmasters during the year. Seventy-five carloads were shipped from the manufactory to the four subagencies, making a total of 105 cars shipped, containing 436,446,590 cards, which weighed 3,244,163 pounds. The shipment of this matter by freight is for the purpose of saving the expense of sending the same matter by mail.

REQUISITIONS FILLED.

The number of requisitions filled during the past year, compared with the number filled during the year ended June 30, 1901, is as follows:

Articles.	1901.	1902.	Increase.	Decrease.	Per cent.
Stamps:					
Ordinary	205,766	207,089	1,323		0.64
Pan-American	11,588	4,826		6,762	58.35
Stamp-books	20,568	33,523	12,955		62.98
Postage-due	18,129	18,460	331		1.82
Envelopes:					
Ordinary-stamped	86,589	88,125	1,586		1.83
Special-request	267,617	303,519	35,902		13.41
Official and registered-package	132,300	147,321	15,021		11.35
Postal cards	80,118	77,809		2,309	2.87
Total	822,625	880,672	58,047		7.05

ISSUE OF POSTAL CARDS.

The number of postal cards issued to postmasters during the year from the agency at the place of manufacture and from the several subagencies is as follows:

Kind.	Main agency at manufactory.	Troy subagency.	Cincinnati subagency.	St. Louis subagency.	Washington subagency.	Total.
A		48,000	104,000	136,500	59,000	347,500
D	1,546,450	2,566,750	2,986,250	2,691,500	1,398,000	11,188,950
E	2,200	285,050	55,700	295,650	119,250	757,850
F		500	500	1,500	1,750	4,250
H	139,538,500	72,948,500	89,410,000	140,097,000	81,514,000	523,508,000
K	111,540	2,531,500	2,573,000	3,666,500	2,515,000	11,397,540
Total	141,198,690	78,380,300	95,129,450	146,888,650	85,607,000	547,204,090

The issue of postal cards as shown by the foregoing table is 17 per cent below that of the preceding year. This decrease is due to the fact that no cards were manufactured from December 30 to March 6, because of the inability of the contractor to start the manufacture of cards at the new factory in Maine before the latter date. Fortunately, an extra reserve stock of 50,000,000 cards had been provided at the old manufactory, so that the Department's supply did not become exhausted, although for several weeks it was necessary to reduce postmasters' requisitions, furnishing only a month's supply at a time until the contractor was able to replenish the Department's stock.

STAMPED PAPER FURNISHED CUBA AND THE PHILIPPINES.

An itemized statement of stamp supplies furnished Cuba and the Philippines during the fiscal year ended June 30, 1902, is given below:

Denomination.	Cuba.			Philippines.		
	Ordinary stamps, special design (including 2-cent stamps in books.)	Postage-due stamps, overprinted.	Stamped envelopes, special design.	Ordinary stamps, overprinted (including 2-cent stamps in books).	Postage-due stamps, overprinted.	Stamped envelopes, overprinted.
1-cent	3,000,000		2,000	500,000	250,000	194,000
2-cent	10,564,480		688,500	1,920,220	250,000	201,000
3-cent				200,000		
4-cent						1,000
5-cent	2,000,000		500	450,000		500
10-cent	1,200,000	50,000		250,000		
10-cent special delivery	550,000			100,000		
50-cent					2,000	
Total	17,314,480	50,000	691,000	3,420,220	502,000	396,500

Of the 10,564,480 special-design adhesive 2-cent stamps furnished the department of posts of Cuba, 192,000 were in books of 12 stamps each, and 372,480 in books of 24 stamps each; a total of 564,480 stamps, bound in 31,520 books.

Of the 691,000 special-design stamped envelopes furnished the department of posts of Cuba 590,000 were "ordinary" and 101,000 "special request."

All of the 1,920,220 overprinted 2-cent stamps furnished the department of posts of the Philippines were in book form, as follows: 720,000 in books of 12 stamps each, 720,000 in books of 24 stamps, and 480,220 in books of 48 stamps; a total of 100,005 books.

Of the 396,500 overprinted envelopes furnished the department of posts of the Philippines 390,000 were "ordinary" and 6,500 "special request."

The temporary United States military government being withdrawn from Cuba in the spring of 1902, this Department ceased to receive and transmit to the manufacturer orders of the Cuban administration for stamps supplied. The Cuban administration has been requested to discontinue the use of United States postage-due stamps and postal cards overprinted with the word "Cuba," as soon as distinctive designs can be prepared by the new postal administration of Cuba.

The following is a statement showing the total amount of stamped paper furnished the department of posts of Cuba during the entire period in which the orders were transmitted through this Department:

Denominations.	Ordinary stamps overprinted.	Ordinary stamps, special design (including 2-cent stamps in books).	Postage-due stamps overprinted.	Postal cards overprinted.	Stamped envelopes overprinted.	Stamped envelopes, special design.
1-cent	4,000,000	13,000,000	200,000	1,003,000	20,000	5,500
2-cent	4,000,000	27,564,480	250,000	581,750	80,000	1,596,500
2½-cent	2,000,000					
3-cent	4,000,000	2,000,000				
5-cent	4,000,000	5,500,000	170,000			100,500
10-cent	400,000	1,800,000	120,000			
10-cent special delivery	20,000	650,000				
Total	18,420,000	50,514,480	740,000	1,584,750	100,000	1,702,500

CHANGES IN DESIGNS OF POSTAL CARDS, POSTAGE STAMPS, AND STAMPED ENVELOPES.

My last report contained a description of the new 1-cent postal card. It was afterwards found that the three-quarters face of the late President McKinley, which had been adopted as the subject of this card, did not give good results in printing, and it was superseded by another portrait of Mr. McKinley, a profile looking to the left. On April 29, 1,625,000 cards which had been printed from the rejected die were destroyed by the United States postal card agent at the manufactory, under instructions from this office, none of the cards printed from this die having been issued to postmasters.

A new design for the domestic reply card is in course of preparation, but has not yet been adopted.

During this fall and winter a new series of ordinary postage stamps will be issued. The series will contain an additional denomination, 13-cent, intended principally for payment of postage and registry fee on letters addressed to foreign countries. Before the issue of this stamp at least two stamps were required to make up the 13-cent fee. The subject adopted for the 13-cent stamp is a portrait of the late President Benjamin Harrison, and the color selected is dark slate. The only changes of subjects on the other denominations are in the 4 and 5 cent stamps, on which the portraits of Lincoln and Grant will be interchanged; in the 8-cent stamp, on which a portrait of Martha Washington will replace that of General Sherman, whose likeness will appear on the reply postal card; in the 1-dollar stamp, on which a portrait of Admiral Farragut will supersede that of Commodore Perry; and in the special-delivery stamp, which will show a messenger boy mounted on a bicycle. Instead of a uniform border for the entire series, as on the old stamps, each stamp in the new issue will have a distinctive border of a highly ornamental and artistic design. To add historical and educational interest to the series, the name of the subject will appear below the portrait on each stamp, with the years of birth and death.

The contractor is now preparing new designs for stamps on embossed stamped envelopes. There will be four denominations in the series, as at present, viz, 1, 2, 4, and 5 cent. The old subjects will be retained, i. e., profile portraits of Franklin, Washington, Lincoln, and Grant, but on the 4-cent and 5-cent envelopes Lincoln and Grant will be interchanged as on the ordinary adhesive stamps of these denominations. It is planned to have a different design for each of the four denominations, and the names of the subjects, with years of birth and death, will appear.

It is purposed to add four envelopes to the new series taking effect January 1, 1903 a No. 6 1-cent (ungummed), of white paper, made after the second quality formula, and an ungummed No. 8 of 1-cent denomination, both for mailing circulars; a 2-cent newspaper wrapper, 8 by 12 inches, and a 4-cent wrapper 10 by 15 inches in dimensions. The present 2-cent wrapper, 5½ by 10½ inches, will be discontinued.

IMPROVEMENTS IN METHODS.

During the year extensive experiments were made by the superintendent of stamp supplies to determine whether the card system of ledger accounts could be adapted to the needs of the stamp division. Accounts are kept with every postmaster in the United States, and at present 37 immense ledgers are required to contain the accounts of stamp supplies furnished, and 11 additional ledgers for official envelopes. The card system is being generally adopted in lieu of books by large corporations and by many departments of the Government, and the tests which have been made indicate conclusively that the cards could be used to very decided advantage in the stamp division. The only objection is in the initial cost, which is about three times that of a set of books; but as a set of stamp ledgers lasts only two years and a set of official envelope ledgers three years, while the cost of renewing cards after the cabinet containing them has been purchased is comparatively small, the card system would in time prove more economical than the books.

It is hoped that an appropriation can be secured from Congress for the installation of the card system when the present sets of books expire. It is found to be a very severe tax on the clerical force of the stamp division to start a new set of ledgers. It requires at least the time of several high-grade clerks for three or four months to prepare the books for use by writing in the names of post-offices, counties, postmasters, and amount of bonds. With the card system once installed, this draft on the clerical force would no longer be necessary, since the accounts would be renewed by the bookkeepers as the old cards became filled up; and another important advantage would be that "dead" accounts, after the discontinuance of post-offices, would not have to be carried along with current accounts, but would be filed in a separate cabinet.

An investigation is in progress with a view to instituting other improvements in the methods of the stamp division which it is believed will simplify and lessen the work, which improvements are necessary in order to keep abreast of the increased volume of business, without an increase of force.

A PLAN TO SIMPLIFY REMITTANCES BY MAIL.

During the year ended June 30, 1902, I had the honor to be appointed by you on a commission to investigate and determine upon the practicability of a new plan for remittances by mail proposed in bills H. R. 12779, S. 4557, and S. 5201, which embodied the "post-check" system. The subject was very exhaustively considered by the commission and a majority report was rendered unfavorable to the proposition. I was in the minority and, together with the Auditor of the Treasury Department for the Post-Office Department, reported favorably. It seems opportune to state that after a further investigation of the subject I am more than ever convinced that this or some other more simple and convenient method of making remittances than any now in existence is a great need of the people.

DIVISION OF REDEMPTION OF STAMPED PAPER.

Claims for redemption of stamped paper received from postmasters during the year, and their disposal, are as follows:

	Regular.	Pan-American.	Total.
Claims presented	13,121	4,468	17,589
Claims allowed	12,752	4,468	17,220
Claims rejected	369		369
Value of redemptions	$401,316.33	$456,781.80	$858,098.13
Increase of regular cases			1,480
Increase in value of regular cases			$52,667.26
Value of letter sheets included			$2,357.95

During the year it was necessary to instruct 2,439 postmasters as to the proper manner of signing letters of transmittal, of stamp supplies for redemption, and 1,493 postmasters as to the redemption of stock of all kinds.

Two thousand seven hundred and sixty-four postmasters returned stock for redemption, and 1,287 firms and individuals were instructed that stock was not redeemable from them.

The number of registered packages of rejected stock returned to postmasters and individuals was 896.

DIVISION OF CLASSIFICATION OF MAIL MATTER.

The number of original cases received, briefed, and treated in this division during the year was 13,636.

The larger part of these related to the classification, treatment, and collection of postage on second-class matter.

The applications for entry to the second class of mail matter favorably considered numbered 4,572, a decrease of 413 from the previous year. Of these, 2,879 were shown by the serial number to be in the first year of issue, and are regarded as new publications, while the remainder, 1,693, were old—reentered by reason of change of name, office of publication, periods of issue, or other cause.

Entry was denied 1,681 publications, a decrease of 300 from the previous year.

The total number of applications passed upon was 6,253, a decrease of 713 from the previous year. In addition to these, the certificates of entry of 510 publications passing in the mails as second-class matter were canceled.

The total number of publications passed upon and their status determined was 6,763, a decrease of 203 from the previous year.

Deducting from the total number of original cases received, 13,668, the number of cases passed upon to determine the status of periodical publications, 6,763, leaves 6,873 which pertained to first, third, and fourth class matter and miscellaneous questions relating to second-class matter.

In conducting the correspondence of the division, 17,568 letters and 38,014 circulars were sent. Of the circulars, 26,259 pertained to the auditing of 37,954 postmasters' quarterly statements of pound-rate postage collected.

WEIGHT, ETC., OF SECOND-CLASS MATTER MAILED AT THE POUND RATE AND FREE OF POSTAGE.

The number of pounds of second-class matter mailed upon which postage at the cent-a-pound rate was paid was 454,152,359, creating a revenue of $4,541,523.59—an increase of 24,707,786 pounds in weight and $247,077.86 in postage collected at the pound rate—an increase of 5.75 per cent over the previous year.

The number of pounds of second-class matter mailed free of postage within the counties of publication during the fiscal year was 34,094,544, which is 6.98 per cent of the entire amount mailed.

The aggregate amount of second-class matter mailed at the pound rate and free of postage during the year was 488,246,903 pounds, or 244,123.45 tons, an increase of 27,027,066 pounds over the previous year.

The number of post-offices at which second-class matter was mailed at the pound rate was 9,426, a decrease of 194 from the previous year.

COLLECTIONS OF THIRD-CLASS POSTAGE ON MATTER IMPROPERLY MAILED AT SECOND-CLASS RATES.

There has been a marked increase in the amount of third-class postage collected on matter improperly mailed at the pound rate. The amount of such collections during the fiscal year ended June 30, 1900, was $8,734.36; in the fiscal year ended June 30, 1901, it was $15,286.06. In the last fiscal year it was $28,195.89, an increase of $12,909.83, or 84.45 per cent, over 1901 and an increase of $19,461.53, or 222.37 per cent, over the collections for 1900.

These increases are attributable to a closer scrutiny of matter mailed at the pound rate; to the enforcement of the orders of the Postmaster-General dated July 17, 1901; and to the requirement which became operative April 1, 1902, requiring publishers to deposit with postmasters at the mailing offices an amount sufficient to cover postage at the third-class rate on copies of publications mailed pending action of the Department on applications for entry thereof as second-class matter.

MAILINGS OF SECOND-CLASS MATTER AT THE LARGER OFFICES.

In preparing the exhibit showing the mailings of second-class matter at the larger post-offices it was found that several offices not included in Table 12 of the report of 1901 had increased the amount mailed so as to equal the receipts at some of the smaller offices included in that table. For this reason the table prepared for the present year includes the names of 45 post-offices. (See table 10, page 620.)

It will be seen that there were decreases in the mailings of second-class matter at six of the offices included in the table of last year. These offices, with the amounts of decreases, are as follows:

	Pounds.
St. Louis, Mo	32,949
Augusta, Me	456,182
Springfield, Ohio	176,262
Denver, Colo	193,415
Louisville, Ky	783,586
Utica, N. Y	35,202
Making an aggregate decrease at these offices of	1,676,596

It appears from the statement in table 10 that New York, N. Y., and Chicago, Ill., collected 35.26 per cent of the entire amount of pound-rate postage collected in the United States, as against 35.88 per cent in the previous year; and that the five offices, New York, Chicago, Philadelphia, St. Louis, and Boston, mailed 49.68 per cent, as against 50.75 per cent for the previous year, and that the forty-five offices mailed 82.437 per cent, as against 79.91 per cent mailed by thirty-four offices in the previous year.

MAIL MATTER.

WEIGHT AND REVENUE BY CLASSES.

The following statement shows the actual or estimated weight and revenue of the four classes of mail matter with their subdivisions, for the year, exclusive of Government free matter:

Statement of actual and estimated weights of the different classes of matter, except "government free," mailed in the fiscal year ended June 30, 1902, with the revenue derived from same, and the percentages of weight and revenue of each class, compared with the total.

Classification.	Weight.	Weights combined.	Per cent of weight.	Per cent of combined weights.	Revenue.	Revenues combined.	Per cent of revenue.	Per cent of combined revenues.
	Pounds.	*Pounds.*						
Postal cards	3,441,136	101,103,928	0.46	13.56	$5,591,636.40	$90,950,751.72	4.79	77.91
First class except postal cards	97,662,792		13.10		85,359,115.32		73.12	
Second class, mailed at pound rate	454,152,359	488,246,903	60.90	65.47	4,541,523.59		3.89	
Second class, free	34,094,544		4.57					
Second class, mailed by publishers and news agents with stamps affixed	2,716,530		.37		279,258.25	4,820,781.84	.24	4.13
Transient, second class, mailed by other than publishers and news agents, with stamps affixed at the 4-ounce rate of postage	24,871,026		3.33		1,888,125.54		1.62	
Third class	92,573,141		12.41		13,716,358.17		11.75	
Seeds, scions, roots, bulbs, etc	5,156,245	29,542,456	.69	3.96	478,243.02	4,641,845.47	.41	3.98
Fourth class	24,386,211		3.27		4,163,602.45		3.57	
Foreign, except first class	6,688,888		.90		710,781.26		.61	
Total	745,742,872		100.00		116,728,644.00		100.00	

It will be observed from this table that second-class matter mailed by publishers and news agents at the pound rate of postage, and free within the counties of publication, weighed 488,246,903 pounds, or 65.47 per cent of the total weight of all mail matter, except Government free, or 68.61 per cent (over two-thirds) of the total weight of all mail matter from which postage was derived, yet yielded only $4,541,523.59, or 3.89 per cent of the whole postage revenue.

The questions which must soon be asked are, "Why is the weight of this particular class of mail matter, as compared with the whole, so astoundingly disproportionate to the revenue which it yields?" "How long, under the advances now being made in the publishing business, will it be before this second-class matter is 90 or more per cent of the bulk weight of all mail matter?" "What is the postal serv-

ice for—is its main purpose and use to serve one class of merchants at the expense of all the people?" These are pertinent questions. When the public becomes thoroughly aware that for every dollar paid by a publisher at the cent-a-pound rate of postage not less than $3 are drawn from the public purse, the United States Treasury, to pay the cost of distribution of that matter in the mails, there is likely to be an unmistakable demand for an increase in the rate to a point commensurate with the cost of the service to the Government on those publications defined in connection with my recommendation for a new postage rate, found on page 574.

THE LAW OF SECOND-CLASS MATTER—ITS ABUSES; THE ABUSES CORRECTED.

Of the statutes now in force defining and limiting second-class matter the following is the most important, since under it the great bulk of that class is originated, and under it the correction of the abuses has been principally effected:

SEC. 427. Mailable matter of the second class shall embrace all newspapers and other periodical publications which are issued at stated intervals, and as frequently as four times a year, and are within the conditions named in sections twelve and fourteen.

SEC. 428. The conditions upon which a publication shall be admitted to the second class are as follows:

1. It must regularly be issued at stated intervals, as frequently as four times a year, and bear a date of issue, and be numbered consecutively.

2. It must be issued from a known office of publication.

3. It must be formed of printed paper sheets, without board, cloth, leather, or other substantial binding, such as distinguish printed books for preservation from periodical publications.

4. It must be originated and published for the dissemination of information of a public character, or devoted to literature, the sciences, arts, or some special industry, and having a legitimate list of subscribers: *Provided, however*, That nothing herein contained shall be so construed as to admit to the second-class rate regular publications designed primarily for advertising purposes, or for free circulation, or for circulation at nominal rates. (Act of March 3, 1879, sec. 14, 20 Stats., 359.)

SEC. 452. That publications of the second class, one copy to each actual subscriber residing in the county where the same are printed, in whole or in part, and published, shall go free through the mails; but the same shall not be delivered at letter-carrier offices, or distributed by carriers, unless postage is paid thereon at the rate prescribed in section thirteen of this act (the cent-a-pound rate): *Provided*, That the rate of postage on newspapers, excepting weeklies, and periodicals not exceeding two ounces in weight, when the same are deposited in a letter-carrier office for delivery by its carriers, shall be uniform at one cent each; periodicals weighing more than two ounces shall be subject, when delivered by such carriers, to a postage of two cents each, and these rates shall be prepaid by stamps affixed.

For publications coming within the prescribed conditions, the statute fixes the postage rate at 1 cent a pound, except that copies of such publications may go free of all postage to subscribers residing within the county where the same are printed, in whole or in part, and published, provided they be not addressed to a letter-carrier office.

On the bulk weight of second-class matter carried in the mails, taking into account the free county matter, the estimated average revenue is eight-tenths of a cent a pound. As the cost of handling is estimated to be approximately 4 cents a pound, it is manifest that the revenue from other sources must be drawn upon to make up for what is not paid by the publishers. Therefore, the publisher's mailing privilege is of the nature of a subsidy, for it creates an expense to the Government, which must be paid by the people.

The legitimate press is considered somewhat in the light of the public school system; the nation gets back in the enlightenment of the people all and much more than it bestows in the way of a nominal postage rate or gratuity toward the expenses of distribution. In that case it is a justifiable expenditure for the public benefit, and there should be no complaint. Postmaster-General Smith, in his annual report for the fiscal year ended June 30, 1901, said:

"Our free institutions rest on popular intelligence, and it has from the beginning been our fixed and enlightened policy to foster and promote the general diffusion of public information. Congress has wisely framed the postal laws with this just and liberal conception. It has uniformly sought to encourage intercommunication and the exchange of intelligence.

* * * * * * *

"In harmony with this sound and judicious policy it has deliberately established a low rate of postage for genuine newspapers and periodicals, with the express design of encouraging and aiding the distribution of the recognized means and agencies of public information. It is not a matter of favor, but of approved judgment. It is not for the publishers, but for the people. But in adopting this special rate for a legitimate public end Congress has sought to restrict its privilege to legitimate publications with a manifest public aim and a clear public demand. It never meant to open the flood gates for an inordinate stream of purely private enterprises which have no public object whatever within the contemplation of the law, and which have seized upon the low rate of postage solely for private profit at the public expense.

THE INTENT OF THE LAW.

"The intent of the law is clear from its terms. It seeks to define boundaries and to prescribe conditions which shall limit the privilege to the kind of publications really designed to be included. First of all, it provides that to be entitled to the second-class rate the publication must be 'originated and published for the dissemination of information of a public character, or devoted to literature, the sciences, arts, or some special industry.' This test has never really been enforced, and its rigorous enforcement is not now undertaken, for it raises questions which may be matters of opinion rather than of fact. Its strict application would, without any other test, manifestly rule out thousands of existing publications. But there are other tests which present matters of fact. The possession of the character thus defined is not enough.

"The law further requires that the publication must have 'a legitimate list of subscribers.' There must be not only a public object, but a real public call and approval, attested by general subscriptions. But even this is not all. A publication having all these characteristics might also have others which would plainly conflict with the intended prerequisite of having a distinct public purpose ratified by a distinct public demand. So the law adds the proviso that nothing in its terms 'shall be so construed as to admit to the second-class rate regular publications designed primarily for advertising purposes, or for free circulation, or for circulation at nominal rates.'"

These provisions taken together plainly show the design of the law. Had they been strictly administered from the beginning admissions to the second-class rate would have been restricted to legitimate publications complying with the prescribed conditions, and there would be no such question as is now presented. But the administration has been in many hands. The applications for admission have gradually broadened. Every new case has made its special representation, and taken singly has pleaded no harm and no burden. Little by little the limitations have been relaxed and every transgression has been made the pretext and precedent for another. Many of the publications once entered have changed their character since admission, and, if at first entitled to the pound rate, have by the departure forfeited their original right. In these various ways thousands of publications have come to enjoy the privilege which are not within either the spirit or the letter of the law, and the volume of second-class mail has been immensely swollen by a vast and questionable mass of printed matter which was not intended or foreseen when Congress, in the educational interest of the people, provided that the Government should practically pay the cost of transmission."

The difficulty has been, and still is, to confine this special mailing privilege, for which the people are so heavily taxed, to "genuine newspapers and periodicals" or to the "legitimate publications," of

which Postmaster-General Smith speaks. No person can read the statute without having a very accurate conception of the purpose of Congress. It is patent, and in the preceding quotation it is put beyond peradventure. The wonder is that the Department for so many years, when the administration has been in many different hands, did not arouse from its lethargic treatment of this subject, which in importance is second to no other in the whole postal system, and call a halt in the scandalous waste of the people's money by subsidizing periodical publications (that is to say, admitting them to the second class) which do not, except in the merest technical sense, conform to the requirements of the law. The policy seems to have been "all applications accepted—no questions asked."

The abuses in this class of mail matter have grown to be enormous, and while at this late day, when the task is of such magnitude as to serve as a strong deterrent, still a reform has been undertaken. The new regulations of July 17, 1901, were framed to reach as far as possible all the abuses of this subsidized rate. Of course these regulations will not reach and cure all the abuses; they will fall short, but in how great or how small a degree can not be told at this time. As will appear more particularly later on, many of the abuses have been corrected, the effect of which is already clearly apparent in the revenues; but it will take time to determine the permanent effect. For the present, suffice it to say that but for the spending of approximately four millions for rural free-delivery service, which is an extraordinary feature of the postal system, there would not only be no deficit, but in fact a surplus of upward of a million dollars over the expenditure for the year ended June 30 last.

ABUSES CORRECTED.

The abuses of the second-class rate have been enumerated and explained in previous reports. They consist principally of books masquerading as "periodical" publications; the return of unsold copies to news agents; excessive circulation of sample copies; bulk so-called subscriptions by persons interested in one way or another in the circulation of the publications; house organs; premiums or other considerations than the publication itself as an inducement to subscription, by which process pretended periodicals and other abuses exist—these are the most flagrant.

One abuse—the news agents' return of unsold copies—has been wholly corrected, and much is accomplished on the others. A great part, if not all, of the so-called periodical publications which have the characteristics of books have been placed in the third class, which, under the law, is the proper classification. There are several varieties of this class of publications: There are books of railroad time tables; books containing lists of names of attorneys; price lists; statistical lists; lists of books; lists of post-offices; lists of express offices; lists of sailing vessels; lists of railways; lists of business houses; dock lists; lists of churches; lists of clergymen; and others. This class of publications is reprinted substantially in the same type each "period of issue," the corrections or revisions necessary to bring them up to date being practically all the new matter in them. These corrections were, of course, made often enough to bring the "periodical" technically within the requirements of the law of second-class matter as to frequency of issue. They are purely reference and guide books.

Then there are the novels—so-called "serials," reprints of the classics, of histories, of standard fiction, of city charters, of ordinances, of building laws, of election laws, etc.; dictionaries, directories, combination directories and memorandum books; books on fancy work, on physical culture, and on drawing; cook books; books on private theatricals, on house games, and on out-door sports; atlases, both office and pocket sizes; almanacs, yearbooks, guidebooks, turf guides and tips on horse races; guidebooks on farming, on poultry and on stock raising; telegraph codes, hymn books, song books; books on health culture, books of recitations, joke books; text-books on natural history, on geography, and on astronomy; books of music, both instrumental and vocal; books of sermons; treatises on philosophy, on theology, and on political economy; market reports, stock quotations; mere strips of cardboard containing a single line quotation from the Bible on one side and blank on the other; scriptural text or hymns printed on one side of a piece of cardboard, the other side containing a picture; and, too, the Bible itself reprinted in twelve parts and issued as a monthly periodical.

There is another lot of miscellaneous so-called "periodicals" issued under convenient titles. They comprise large single-sheet posters of calendar announcements of coming events (notwithstanding the law reads "Formed of printed paper sheets"); sheets of music in exactly the same form and style as that used on the piano, but called "periodical" publications because issued once a week; at least one other periodical was a reprint of old business and personal letters; another, a collection of pictures put up in a loose wrapper. Some are railroad time-tables printed on a single sheet to be posted on billboards. All of the foregoing have been rejected from the second class, and so far as now known there are none of like character remaining in that class; they are now in the main held to be third-class matter, but some are of the fourth class. The Department exhibit of the foregoing alleged "periodical" publications is worthy of a place in the Smithsonian Institution.

There is also a lot of a not easily definable class of publications, but easily determinable as pretended periodicals, made up, some of fiction, new or old, clippings, and occasionally some original matter, designed merely to cloak what is actually advertising or circular matter. Some progress has been made in eliminating these advertising sheets from the second class.

INJUNCTIONS ISSUED.

Movement on the last-mentioned class (pretended newspapers and periodicals) has been practically suspended since January last, owing to the restraining orders issued by the supreme court of the District of Columbia, some twenty in number. This has prevented the Department from taking action on many more than those upon which it is actually restrained, because it was deemed best to go no further upon that class of cases until a decision of the court is rendered. I am pleased to be able to say that, notwithstanding the law's delay in these cases, which has been the means of much loss of revenue to the Government, there is now every prospect that a decision will be rendered promptly, and the work of eliminating the abuses of the second class of mail matter, so far as may be done under the new regulations, may then go on without interruption.

ATTITUDE OF THE PRESS AND PUBLIC.

The reform thus far accomplished has not been without friction and bitterness on the part of the publishers affected. When once a second-class privilege is secured it is not willingly surrendered. Great displeasure is incurred by the official in charge, and I am sorry to say that there has been much misunderstanding as to the purpose and position of the Department, but through it all the legitimate press has kept its head, and it is clearly manifest that the public approves the course. Probably no postal subject of recent years has received the consideration of the public and the "press" in such a degree.

ABUSES STILL EXISTING MORE OR LESS.

SAMPLE COPIES.

The sample-copy abuse is operated in numerous ways. It has been corrected in a material measure by limiting the number which may be mailed at the pound rate with each issue to 100 per cent of the legitimate list of subscribers, the cumulative privilege being prohibited. The moral effect of this restriction is very considerable; but there are still abuses of the privilege in the sending of alleged sample copies, not as the law contemplates, for the purpose of inducing subscriptions, but in the interest of some advertiser or other person interested for business reasons in the distribution of the copies.

Thus publishers still traffic in their sample-copy privilege. It is hoped that finally this privilege will be confined within the law, the intent of which is, that sample copies may be mailed at the pound rate only when sent in good faith by the publisher for the purpose of inducing subscriptions, their character as samples being vitiated by any outside interest. The statute does not intend that the Government shall bear the expense of distribution of alleged sample copies which are not purely such.

BULK SO-CALLED SUBSCRIPTIONS.

For years the bulk subscription abuse has received attention, but never has it effectually been corrected. It exists at this time, but owing to the vigilance of the Department it is not greatly on the increase. The plan is for an advertiser or other person interested in the circulation of a publication to furnish the publisher with a list of names and addresses and pay the "subscriptions" for those persons, usually at a very much reduced rate. This is contrary to law. A subscription to be "legitimate" must be paid for by the person who is to receive the publication. The insertion in the regulations of a provision that permits of "gift" subscriptions where there is no other intention than to compliment the receiver has been the cause of much of this wrongful practice.

It was not contemplated, of course, that any publication would have many of such gift subscriptions; but this provision has been seized upon by publishers as an excuse to permit advertisers and others to pay for great numbers of copies as before stated. It will be seen that if an advertiser or other interested person may pay for any considerable number of subscriptions for others in this way, and they be allowed as "legitimate," it is easy to show a fictitious book trans-

action for such subscriptions, when in fact no money has passed: and that a publisher may thus completely circumvent the law by claiming as subscribers any number of persons whose names and addresses he can secure. It will also be quite clear that while this practice is allowed, the pound-rate privilege is no longer confined to publishers, but is the privilege of any person to circulate his advertising matter when presented in the form of a periodical publication and through the medium of a publisher.

HOUSE ORGANS.

The house organ is a publication the purpose of which is directly or indirectly to promote the other business of the publisher. Often a "dummy" publisher is provided in order to effectually conceal the true publisher and the real purpose. Frequently these publications are highly meritorious from a news or literary standpoint, and can well afford to be, so long as the Government is willing to pay the greater part of the cost of their distribution in the mails. The better the character of a house organ the more elusive and more unlikely it is to be detected by postal officials. It is probably the most difficult of all the abuses to locate. A publication strictly complying with the law and regulations in every sense may be admitted to the second-class rates of postage on one issue, and in its very next number it may develop into a house organ and escape notice as such for a very considerable time.

The public can usually be depended upon to subscribe for that which it actually wants, and does from the nature of things eschew the house organ as if by instinct; and as the law requires a "legitimate list of subscribers," the house organ publisher is put to desperate straits to comply with this provision. Bulk subscriptions, premiums to induce subscribers, and every conceivable means is resorted to in order to keep up an alleged "legitimate list of subscribers."

The scrutiny the Department is now giving this class of mail matter throughout the country, and the awakening of postmasters to their duties in this regard, is making the existence of the house organ less easy.

PREMIUMS TO SUBSCRIBERS.

A premium or other consideration as an inducement to subscription is the most vicious, most demoralizing, from an administrative standpoint, of all the abuses, because by the means of it others thrive. When a publisher fixes the subscription price of his publication he should be compelled to secure subscribers at that price. If the price be $1 a year and the publisher is allowed to give a watch, a penknife, a chance to win a prize in a guessing contest, an article of wearing apparel, a piece of household furniture, or any other thing of value as an inducement to subscribe for the periodical, it is no longer possible to determine fairly for the Government whether the claimed list of subscribers is "legitimate" within the meaning of the law.

The theory of the premium practice is that while a publisher is seeking to establish his publication, or to enlarge its circulation, he may introduce it by giving something off the subscription price by the way of a premium. This practice has developed beyond all reason. Names are secured in this way, and claimed as subscribers, that may

fairly be said in a majority of instances to represent no real demand for the publication itself; it is taken merely because it is an inseparable part of a seductive proposition. The article which is given as an inducement is so glowingly represented in the advertisement that the bait is effective, and alleged subscribers are secured notwithstanding the publication goes to the waste basket the moment it enters the household or the office.

It is gross injustice that the Government should pay any part of the cost of distribution through the mails of copies of a publication about which there is any question as to the desire therefor by the person to whom it is sent. The theory is that the second-class law was created for the people, for their advancement and betterment, not for the publisher; but of what advantage, or betterment, is a publication that is not read, however good it may be? The only certainty that a publication is of interest and will be read by the person who receives it, is that he, and no other, pays the subscription price in full. He only is a "legitimate" subscriber within the intent of the law. If advertisers would more thoroughly analyze this premium method of increasing circulation there would probably be a falling off of patronage of publications for which there is not a clear public demand in a list of subscribers who pay the full advertised price.

By premium schemes enormous circulations to claimed subscribers are worked up for publications which if they stood for patronage on their bare merits as news or literary journals, could not show more than a small percentage of subscribers as compared with the lists secured by premiums. A like inducement is required to keep the names on the list after each expiration. All of this is at the great expense of the people; they are taxed at least three-fourths of the cost of distribution of these copies, which in the main serve no better purpose than to kindle the fire, or to lumber the wastebasket, and to enable the publishers to demand a high rate for advertising space on account of large "public demand." The amended regulation of July 17, 1901, has in a measure cured this abuse; but it is not yet prohibited that a publisher may give a premium to induce a subscription.

The ruling of the Department under the amended regulation is that the premium may not be represented, or may not have an actual market value greater than 50 per cent of the subscription price—that is to say, a publisher is allowed to discount the advertised subscription price 50 per cent—so the way is still open to evade the law.

If this practice of giving something in addition to the publication for the price paid were absolutely cut off, administration would be much easier and the people would reap the benefit in greater protection against abuses.

PRETENDED NEWSPAPERS AND PERIODICALS.

A publication of this class is difficult to define. No general rule can be applied. They are elusive, varying, and uncertain. Usually they are made up of matter clipped and used intact, or of matter "edited" from other publications. By this is meant that an article may be taken from one of the leading journals and the language and form of some of the sentences so changed as not to constitute an exact plagiarism. It is then reused with other matter similarly obtained, or perhaps some original matter, and put in a form of a newspaper or magazine, and is thus made the medium for carrying advertisements (its principal

purpose) through the mails at the subsidized postage rate. Usually these publications have enormous circulations, worked up by premium inducements to subscription. The price being already nominal, if the publication were of value it would secure patronage from subscribers without extraneous inducements. In fact, these publications are generally nothing but combination circulars. A central publishing house is able to secure the advertising because of exceptionally cheap and convenient facilities for distribution. The so-called publishers are, in fact, advertising agents; they are not true publishers in the sense contemplated by law.

There are 16 publications of this sort in one State, the combined circulation of which amounts to about 7,000,000 copies of each issue—approximately 80,000,000 copies a year. In the case of one of them it required eight cars with a carrying capacity of 15 tons each to transport the copies issued during one official quarter. It is improbable that more than a small per cent of these copies are ever read or receive the scrutiny of the persons to whom they are sent, because they are not in response to a genuine public demand. They are advertising mediums and nothing more. Once a name is secured as a subscriber it is seldom relinquished. The Department is constantly in receipt of complaints from postmasters throughout the country that these publications are sent to persons who have been dead for years, or who have long since removed, or who absolutely refuse to take the paper from the post-office.

A NEW POSTAGE RATE RECOMMENDED.[a]

A careful study of the subject of the second class of mail matter in all its phases will, I believe, be convincing that the 1 cent a pound rate for publishers, except in the case of daily, triweekly, semiweekly, and weekly newspapers, is no longer a necessity.

The progress in methods and mechanical invention has so cheapened production that there is now no need of a subsidized postage rate for any other class of periodicals. Many publications are now sold as low as 50 cents a year, and some as low as 10 cents a year. It can easily be figured what a small cost it is to a publisher to transmit twelve copies of a monthly to his subscribers, and whether or not it is now necessary to maintain the 1 cent a pound rate for this class. The law prohibits a nominal subscription rate.

A question is, Would the Department not now be justified in holding that 10, 12, 25, or 50 cents a year for a monthly publication is a nominal rate within the meaning of the law, and on that ground rule the publication into the third class of mail matter? Certainly the pound rate can not now be claimed for the reason that the publication is expensive and it is necessary to cheapen it to the people, for whose benefit, not the publishers, that rate was created. The truth is, that many of this cheaper class of periodicals would be given away if the law would permit. The practice is to maintain the fiction of a subscription price and to give back its equivalent in a premium.

Some of the most popular periodicals are open to the charge of being "house organs." The publishers are engaged in some other business or businesses which their periodicals are designed to promote. Nowadays but few book publishers are without their magazines. The same is true of the compounders of medicine, the dealers in carriages, the

[a] For other recommendations made in this report see pp. 678, 679.

designers of fashion, and many others; all have their magazines. Ostensibly they are published for the "dissemination of information of a public character" among the people, and the matter they contain is high grade from a news or literary standpoint; but if the provision of the law prohibiting admission to the second class of publications principally designed for advertising purposes were strictly enforced—and this has never really been undertaken, or if it were the rule of this as of other departments of government (State and national) which award public money for a public purpose to construe the law strictly as against the grantee and liberally to the grantor, that is to say, take the benefit of all doubt to the Government—it is believed, considering their use to advance the other business or businesses of the publishers and the volume of the general advertising they carry, that some of our "best" periodicals would be deprived of the cent-a-pound rate.

The difficulties of administration of this subject are exceedingly intricate and perplexing. Every publisher seeks to gain the second-class rates. It seems that in the past the only thing necessary was to get out some kind of printed matter regularly and have some sort of a list of names which could be called subscribers. This laxity of administration has caused the "periodical" publishing business to be overloaded; and there exists to-day—and this is conceded by publishers themselves—several publications in almost every class where one is in actual public demand. The result is that all are scrambling for circulation in the highest state of competition, and the Government is wasting the money of the people in paying the greater part of the expense of distribution when the evidence of demand, "legitimate" subscriptions, which the law requires, is not present.

The solution of the whole problem is that a new postage rate be created and applied to all publications now admitted to the second class, except daily, triweekly, semiweekly, and weekly newspapers, in the sense in which we understand the word "newspaper." For all others a rate of postage of not less than 4 cents a pound should be established, and the usual conditions for admission to the second class applied, but eliminate the requirement of a list of subscribers, and that the publication shall not be sold at a nominal rate or given away. Under this proposition these restrictions would still apply to newspapers; but in the case of periodicals, upon which a rate sufficient to pay the cost of handling is paid, they would be removed. No one will question the public benefit of genuine newspapers, and for these an absolutely free rate might be granted if the privilege could be properly confined. But I am constrained to say that it is unjustifiable to longer tax the people for any part of the cost of distribution in the mails of any other class of periodical publications.

I therefore propose a new rate at 4 cents a pound, to be paid in money on the bulk weight without regard to the number of pieces, the same as is now the case under the pound rate. This will simplify administration, simplify the matter for publishers, and remove the unjust burden from the shoulders of the people.

ONE-CENT POSTAGE.

There is a public impression, due to various statements in the newspapers and otherwise, that 1-cent postage is probable in the near future, as the practical result of some reforms with regard to the second class of mail matter.

In this connection it is deemed proper to state that it is altogether too soon to consider a reduction of the letter rate of postage on the mere basis that the reforms will save enough to the Government to compensate it for the loss of revenue through the reduction of the letter rate.

It will be interesting to note, however, in connection with my recommendation that a new postage rate be created for periodicals other than daily, triweekly, semiweekly, and weekly newspapers, that had this new rate and the anticipated rate of 1 cent per one-half ounce for letters existed during the last fiscal year the result, based upon an estimate, would have been as follows:

24 per cent loss of postage on first-class matter	$19,539,520.95
Increase from new rate for periodicals	3,639,122.85
Net loss	15,900,398.10
Deficiency for the year	2,544,424.76
Deficiency on account of previous years	393,225.05
Aggregate estimated deficiency for the year	18,838,047.91

or in round numbers, $19,000,000.

From the foregoing it will be seen that even under an increase in the rate of postage on periodicals as recommended, it will not be practicable to establish a 1-cent letter rate before the postal service is thoroughly adjusted, not only to the reforms relating to the second class of mail matter, but also to the enormous expenditures necessary to completely and satisfactorily establish the rural free-delivery system, which is now the settled policy of the Government.

From the statements made throughout this report (relative to the comparative weight of the different classes of mail matter and the revenue therefrom), it will be seen that the postal system is largely monopolized by publishers with more than two-thirds of the total weight of all mail matter from which revenue is derived, for which they pay but about one twenty-fourth of the total postage revenue.

RECOMMENDATIONS.[a]

CONSOLIDATION OF THIRD AND FOURTH CLASS MATTER.

The difficulty of differentiating between third and fourth class matter is annoying to the postal official and irritating to the public. This irritation is accentuated by the well-known fact that under the parcels-post arrangements matter of the fourth class (merchandise) is sent to certain foreign countries in packages larger than are admissible to the domestic mails and at less than the domestic rate of postage—1 cent an ounce or fraction thereof.

The knowledge that this rate is conceded by the Department to be in excess of the actual cost of transportation and handling, that the third-class rate of postage fully covers such cost, and that the volume of fourth-class matter constitutes but a small portion of matter transmitted in the domestic mails, justifies a demand for relief.

It is estimated that the weight of matter of the fourth class carried in the domestic mails during the past fiscal year was 24,386,211 pounds, or 3.27 per cent of the total postage-producing matter carried, and that the revenue therefrom was $4,163,602.45, or 3.57 per cent of the entire postage receipts.

[a] For other recommendation made in this report see p. 676.

The amount of regular third-class matter carried during the same period was 92,573,141 pounds, or 12.41 per cent of mail matter carried, and the postage received therefrom was $13,716,358.17, or 11.75 per cent of the entire postage revenue.

The weight of seeds, cuttings, etc. (fourth-class matter mailed at the third-class rate), is estimated at 5,156,245 pounds, or 0.69 per cent of the total carried, and the postage thereon was $478,243.02, or 0.41 per cent of the postage revenue.

The average postage per pound received on these classes of mail matter is estimated as follows:

Third-class matter (printed matter other than periodical publications of the second class)	$0.14816
On seeds, etc. (fourth-class matter mailed at the third-class rate)	.09275
On fourth-class matter (all mailable matter not included in the first, second, and third classes)	.17073

It will be observed that fourth-class matter constitutes a comparatively small item as to weight; that the revenue received at the fourth-class rate is $4,163,602.45; that the revenue which would be received on this matter were it mailed at the third-class rate would be $3,613,061.02, making a difference of only $550,541.43.

It is, however, fair to assume that the average weight of packages of fourth-class matter is heavier than many which are mailed at the third-class rate, and that the average weight of packages of seeds approximate more nearly thereto. Assuming, therefore, that the packages of fourth-class matter are of the average weight of seeds, the revenue thereon at the "seed" rate (0.0975) would be $2,261,821.53. Deducting this from the revenue received at the 1-cent-an-ounce rate, there would be an apparent loss of $1,901,780.92.

The experience of the Department shows that where there has been a reduction in the postage rate, there has been a corresponding increase in the amount of matter mailed. It may reasonably be assumed that if these two classes of mail matter were consolidated, no material loss of revenue would result, while the cause of existing friction and annoyance would be removed, and the business interests of the country would be served.

In view of these facts, I suggest that the consolidation of the third and fourth classes of mail matter, at a postage rate of 1 cent for each 2 ounces or fraction thereof, be recommended to Congress.

MAILING OF CERTAIN MATTER WITHOUT STAMPS AFFIXED.

I recommend that Congress be asked to authorize the Postmaster-General to accept, under suitable regulations, mailings of large quantities of identical pieces of printed matter and small articles of merchandise without the necessity of affixing postage stamps to the individual pieces. There is no danger of loss in such a practice. The Department is capable of providing for the collection and safe accounting for the full revenue under such authority. A very considerable economy would be effected. The Department would save the expense of manufacturing stamps, the sale of them to the public, and the labor of canceling the stamps on the individual pieces in the post-offices after mailings. On the public side there would be a saving of the labor of attaching postage stamps to the individual pieces. In the interest of the business public I urge this upon your consideration.

REPLY ENVELOPE AND POSTAL CARD.

I renew my recommendation of last year, that Congress be asked to pass a law providing for a reply-envelope and reply postal-card service under a plan for the collection of postage at the place of delivery rather than at the place of mailing.

PENALTY ENVELOPES AND THE FRANKING PRIVILEGE.

On April 1 last, all questions concerning the use and abuse of the official penalty envelope and the franking privilege were transferred from the office of the First Assistant Postmaster-General to the office of the Third Assistant Postmaster-General.

Comparatively few cases involving the use of the penalty envelope in violation of law have been brought to attention, and of those considered it has been found that the persons at fault were as a rule not familiar with the restrictions placed by law upon the use of that envelope. Instances have arisen where newspapers, magazines, pictures, merchandise, pension vouchers, tobacco records, and at times private correspondence have been transmitted in official penalty envelopes in violation of law.

Perhaps the greatest abuse of the penalty envelope which has been brought to attention is the practice of Government officers unlawfully furnishing penalty envelopes or labels to private persons to enable them to transmit free of postage books and other articles purchased from Government contractors or donated to the Government.

While this abuse may be considered as technical, the fact remains that it is a violation of the law.

The abuse of the franking privilege has been much more extensive than that of the official penalty envelope or label. Almost every conceivable article of merchandise has, at one time or another, been offered for mailing under the franks of members of Congress, including sacks and packing boxes, some empty and others loaded with miscellaneous articles of all kinds. Indeed, there seems to be a general misunderstanding as to the limits within which official franks may be legitimately used under the statute.

During the progress of campaigns it appears to be quite a common practice to circulate in franked envelopes campaign documents, circulars, and communications asking for support in securing renomination or election to Congress.

Under the law specific provision is made whereby those entitled to use the official penalty envelope may furnish addressed copies thereof to persons from whom official information is desired. No similar provision is made in behalf of those entitled to the franking privilege, and yet frequent instances have arisen where franked envelopes have been furnished in which to transmit political information for electioneering purposes to the persons whose frank they bear. The official frank has also been used upon matter entirely of a private nature.

These of course are all violations of the law, and their correction not infrequently causes indignant protest and unpleasant friction.

No penalty is provided for the abuse of the franking privilege, and the Department is restricted in its efforts to prevent violations of the law thereunder to simply calling the attention of the person whose frank is misused to that fact. This in a large majority of instances has been sufficient, but as the law now stands the Department appears to have no power to correct the willful abuse of the franking privilege.

NUMBER OF PIECES OF MATTER MAILED DURING THE YEAR.

The following table shows the estimated number of pieces of matter of the several classes mailed throughout this country and to foreign countries during the year:

	Number of pieces.
First-class matter:	
Paid	3,732,031,938
On official business, free	139,151,837
Total paid and free	3,871,183,775
Postal cards	740,087,805
Second-class matter:	
Mailed at the pound rate	1,862,024,672
Mailed free within county of publication	340,945,440
Mailed for local delivery by carriers, with stamps affixed	24,206,320
Transient second-class matter	122,494,703
Total second-class matter	2,349,671,135
Third-class matter:	
Books, pamphlets, circulars, and miscellaneous printed matter	956,911,198
Fourth-class matter:	
Merchandise, etc. (including seeds, scions, bulbs, etc., at third-class rate)	84,798,683
Matter to foreign countries:	
First-class matter	54,487,403
All other matter	28,306,860
Total to foreign countries	82,794,263
Grand total	8,085,446,859

NOTE.—The above estimate of first-class matter (except postal cards), second and third class matter, and matter to foreign countries is based upon the count and weighing of 1890 (P. M. G.'s report for 1890, pp. 51–52) increased at the rate per cent of increase of revenue from the sale of postage stamps and other stamped paper (100.6 per cent).

It has been customary to give the number of postal cards actually issued during the year as an estimate of the number used. This year the number issued was less than the number issued last year, owing to the fact that no cards were manufactured from December 30 to March 6 because of the delay of the contractor in beginning the manufacture of cards under the new contract. It can readily be seen that the number of cards actually issued would not show the number of cards actually used. The estimate given, therefore, is based upon the number of cards issued during 1901 increased by the rate per cent of increase over 1900 (12.2 per cent).

The number of pieces of second-class matter mailed at the pound rate, and free in the counties of publication, is based upon the actual weight of such matter mailed during the year, increased at the estimated number of pieces per pound (4.1 for the former and 10 for the latter) shown by the count and weighing of 1890.

The number of newspapers and periodicals mailed for local delivery by carriers, with stamps affixed, is estimated upon the ratio of the weight of that matter to the weight of second-class matter paid at the pound rate (1.3 per cent) shown by the count and weighing of 1890.

The number of pieces of transient second-class matter is estimated upon the ratio of the weight of that matter to all other second-class matter (5.5 per cent) shown by the count and weighing of 1890.

DIVISION OF FILES AND RECORDS.

The total number of letters and parcels received, opened, and examined in this division during the year was 2,036,800. Of these letters and parcels, 425 contained money and 17,589 contained postage stamps, stamped envelopes, and postal cards transmitted by postmasters for redemption or credit in their accounts.

The number of registered letters and parcels was 17,584.

Of the letters received, 28,473 were briefed, recorded in the indexes, and filed after final action upon them.

The number of outgoing letters copied, indexed, and mailed was 42,655.

OFFICE OF CHIEF CLERK.

SPECIAL-DELIVERY SYSTEM.

The special-delivery service, since its establishment in 1886, was conducted under the control of this office until April 26, 1902, when it was transferred to the First Assistant Postmaster-General, in accordance with the new postal laws and regulations, effective April 1, 1902. This office, therefore, not having complete records, no report is made.

NEW CONTRACTS.

DEPARTMENTAL ENVELOPES.

Under the requirements of the ninety-sixth section of the act of Congress of January 12, 1895, and in accordance with an advertisement dated March 4, 1902, sealed proposals were invited for furnishing such envelopes to the several Executive Departments of the Government as they might require during the fiscal year ending June 30, 1903.

Seven bids were received, and opened on May 1, 1902, the date set for that purpose, and contracts were awarded and duly entered into with the respective bidders for furnishing these envelopes during the year named, as follows:

The United States Envelope Company, of Springfield, Mass.: For a portion of the white envelopes, all of the cream-laid and azure-blue envelopes, and a portion of the cloth-lined and manila envelopes.

Wolf Brothers, Philadelphia, Pa.: For a portion of the white, manila, and miscellaneous envelopes.

R. Carter Ballantyne, Washington, D. C.: For a portion of the cloth-lined and miscellaneous envelopes.

R. P. Andrews & Co., Washington, D. C.: For a portion of the miscellaneous envelopes.

James Norman Rupp, Washington, D. C.: For a portion of the miscellaneous envelopes.

The American News Company, New York, N. Y.: For a portion of the miscellaneous envelopes.

The Marcus Ward Company, New York, N. Y.: For a portion of the miscellaneous envelopes.

There was an increase of competition over the previous year on white, cream-laid, azure-blue, and manila envelopes, which resulted in a reduction in the price of many of the items.

Contracts for miscellaneous envelopes were awarded to the respective bidders for all the styles and makes on which there was no competition which were submitted as being equal to the respective items called for in the specifications, in order to reduce to the minimum the necessity for going into the open market to make purchases of miscellaneous envelopes and to permit selections from the greatest variety of styles and makes by the several Executive Departments. Contracts were awarded to the lowest bidder where competition existed, and in part to each bidder in the case of tie bids.

REGISTERED PACKAGE, TAG, OFFICIAL, AND DEAD-LETTER ENVELOPES.

Since the close of this fiscal year, under an advertisement dated July 1, 1902, inviting sealed proposals for furnishing to the Post-Office Department registered package, tag, official, and dead-letter envelopes during the period of one year, beginning October 1, 1902, the following bids were received:

Name of bidder.	Total for the year.
Clarence Wolf, of Philadelphia, Pa.	$120,209 05
The Hartford Manufacturing Co., of Hartford, Conn.	119,826.04

The Hartford Manufacturing Company being the lowest bidder in the aggregate, the contract was awarded to it and duly entered into. There was but one bidder the previous year, and the competition this year resulted in lower prices on a number of items.

ADHESIVE POSTAGE STAMPS AND BOOKS OF STAMPS.

The agreement with the Treasury Department (Bureau of Engraving and Printing) for the manufacture of adhesive postage stamps and books of stamps expired with June 30, 1902. Under the authority of the act of Congress approved April 1, 1902, a proposal was submitted by the Bureau giving the prices at which it would continue the manufacture of adhesive stamps and books of stamps. These prices were considered excessive. Sealed proposals were invited, by advertisement under date of July 10, 1902, for furnishing adhesive stamps and books of stamps to the Department for four years, beginning November 1, 1902. In response to that advertisement two bids were received and opened on August 1, 1902, the date set for that purpose, and found to be as follows:

Name of bidder.	Total for 1 year.
American Bank Note Co., of New York, N. Y.	$293,105.38
Bureau of Engraving and Printing of the Treasury Department	290,354.47

The Bureau being the lowest bidder, an award to it was made and an agreement was thereafter duly entered into between the Postmaster-General and the Secretary of the Treasury, which took effect November 1, 1902. By agreement, the adhesive stamps and books of stamps furnished by the Bureau from July 1 to November 1 were paid for at the prices named in the new contract. The prices in the new contract are 15 per cent lower than the prices named in the first proposition of the Bureau, but are somewhat higher on stamps and lower on stamp books than the prices up to July 1, 1902.

STAMPED ENVELOPES AND NEWSPAPER WRAPPERS.

Since the time covered by this report sealed proposals were invited under date of August 12, 1902, for furnishing stamped envelopes and newspaper wrappers to the Department during the four years begin-

ning January 1, 1903. On September 16, 1902, the date set for that purpose, bids were opened and found to be as follows:

Name of bidder.	Total for 1 year.
Purcell Envelope Co., of Holyoke, Mass	$694,244.15
Wolf Bros., of Philadelphia, Pa	684,449.75
The Hartford Manufacturing Co., of Hartford, Conn	663,414.40

The Hartford Manufacturing Company being the lowest bidder in the aggregate, the contract was, under date of September 19, awarded to it, but has not yet been completed. The prices under the new contract are somewhat higher than those in the existing contract.

* * * * * * *

CONCLUSION.

In conclusion, I wish to commend the officers, clerks, and others of this Bureau who have contributed to the results accomplished during the year covered by this report in the close attention given to, and the painstaking discharge of, their official duties.

Very respectfully,

EDWIN C. MADDEN,
Third Assistant Postmaster-General.

HON. HENRY C. PAYNE,
Postmaster-General.

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REPORT OF THE FOURTH ASSISTANT POSTMASTER-GENERAL.

POST-OFFICE DEPARTMENT,
OFFICE FOURTH ASSISTANT POSTMASTER-GENERAL,
Washington, D. C., October 21, 1902.

SIR: I have the honor to invite your attention to the following statement of the operations of this Bureau for the fiscal year ended June 30, 1902:

The work of the Bureau has increased proportionately with the enormous increase in the postal business of the country. In the division of appointments the work was heavier than in any year since 1898. There was a large increase in the number of Presidential postmasters appointed, as compared with preceding years, the total number being 2,370, the greatest in any one year in the history of the Department. This increase was due to the expiration of a large number of commissions during the year and the advancing of many fourth class post-offices to the Presidential grade. There was no material difference in the number of fourth-class appointments made as compared with the year 1901. The work of the division of bonds and commissions is up to date and in satisfactory condition. The work required of the division of post-office inspectors and mail depredations increases with the increase of the postal business of the country, and has been kept well in hand during the fiscal year.

THE DIVISION OF APPOINTMENTS.

The work of this division relates to the appointment of postmasters, establishment and discontinuance of post-offices, deaths and resignations of postmasters, changes in post-office names and sites, and complaints and charges against postmasters.

All papers pertaining to the appointment of postmasters are briefed and filed in this division and prepared for the consideration of the Fourth Assistant Postmaster-General, the Postmaster-General, and the President.

APPOINTMENT OF POSTMASTERS.

There were more appointments of postmasters during the last fiscal year than during the preceding year. The total number of appointments for the fiscal year ended June 30, 1901, was 15,657, while for the fiscal year ended June 30, 1902, they amounted to 16,970, an increase of 1,313. This increase was due to the large number of expirations of commissions of Presidential postmasters. During the fiscal year 1901 the commissions of only 184 postmasters of this class expired, while during the fiscal year 1902 there were 1,892 expirations.

The records show a slight increase in the number of removals of postmasters for cause, due to the policy of the Department to hold postmasters to a more strict account for carelessness and irregularities in the discharge of their duties. There was a gradual improvement in the character of service rendered by postmasters during the fiscal year, and their work has never been more efficient than it was during the period under consideration.

For convenience the division of appointments is divided into sections of two or more States, with a clerk in charge of each section. These section clerks are under the supervision of the chief of the division. Books of record are kept showing, by States, the names of post-offices, alphabetically arranged, and the names of postmasters, together with the dates of their appointment and the dates upon which they are commissioned. These records also show the names of all the postmasters who have served at a given place for a number of years past. In addition to these record books a separate record of Presidential post-offices is kept by the card system, in alphabetical order by States.

A journal is kept by the chief of the division containing a daily record of all changes of postmasters, showing the county and State in which the post-office is located, the name of the retiring postmaster, the name of the appointee, and the reason for the change; also a record of the establishment and discontinuance of post-offices and changes of names and sites. A condensed weekly report is made from this daily journal which shows the operations of the division by States, together with the whole number of post-offices in the United States at the end of each week.

In the preparation of papers in the appointment division, post-offices are divided into two general classes—Presidential and fourth class.

A Presidential office is an office where the salary of the postmaster amounts to not less than $250 per quarter for four consecutive quarters, and the gross receipts for the same time amount to $1,900. When an office has paid the above amount for four consecutive quarters, and the gross receipts have amounted to $1,900 or more, it is then advanced to the Presidential class.

Presidential offices are divided into three classes—first, second, and third. A first-class office is one in which the gross receipts are over $40,000 per annum, the salary of the postmaster of the same being from $3,000 to $6,000. A second-class office is one where the gross receipts amount to $8,000 and not exceeding $40,000 per annum, the salary of the postmasters of this class being from $2,000 to $2,900 per annum. A third-class office is one where the gross receipts are $1,900 and not exceeding $8,000 per annum, the salary of the postmaster being from $1,000 to $1,900 per annum.

Fourth-class offices comprise all offices where the receipts are less than $1,900 per annum, or where the compensation of the postmaster does not amount to $250 per quarter for four consecutive quarters. Fourth-class offices are divided into two kinds—money-order and non-money-order. A money-order office is one where money orders are sold in sums not exceeding $100.

Fourth-class postmasters are allowed as compensation the whole of the box rents collected at their offices, and commissions on cancellations of matter actually mailed at their offices, and on amounts received from waste paper, etc., sold, as follows: On the first $50 or less per quarter, 100 per cent; on the next $100 or less per quarter, 60 per cent; on the next $200 or less per quarter, 50 per cent; and on all the balance, 40 per cent, the same to be ascertained and allowed by the Auditor for the Post-Office Department in the settlement of the accounts of such postmasters upon their sworn quarterly returns.

Presidential postmasters are appointed by the President and confirmed by the Senate. Papers in Presidential cases are prepared in the division of appointments and submitted to the Fourth Assistant Postmaster-General, and by him to the Postmaster-General, who in turn submits them to the President with whatever recommendation he may have to make. When the Senate is in session, the President sends the names of Presidential postmasters to the Senate for consideration. When these nominations by the President are confirmed by the Senate, notice of appointment is mailed from the division of bonds and commissions to the appointees.

After the bond of the newly appointed postmaster is filed and approved a commission is issued. The commission dates from the date of confirmation, and is for a term of four years. When the Senate is not in session a vacation appointment may be made. In vacation appointments, cases are prepared for the consideration of the Postmaster-General and the President in the same way as above stated. The President signs the appointment of the postmaster, notice and blank bond are immediately forwarded him, and upon the approval of the bond he is commissioned. This commission holds until the adjournment of the first session of the Senate following the postmaster's appointment, or until his successor is nominated and confirmed by the Senate, unless said commission be sooner revoked by the President.

When the Senate meets, the President nominates postmasters for all vacancies that have occurred during the recess of the Senate. He may nominate the postmaster appointed in vacation, or some other candidate, if he prefers. Upon the confirmation of any postmaster by the Senate the commission of the postmaster appointed for the vacation terminates, and upon the filing of a bond the postmaster is commissioned for a term of four years from the date of his confirmation.

Fourth-class postmasters are appointed by the Postmaster-General. This class of cases is prepared in the division of appointments and submitted by the chief of the division to the Fourth Assistant Postmaster-General, who initials the jackets authorizing the appointment of postmasters. Notice of appointment and blank bond are sent out by the division of bonds and commissions to the appointee, and upon the approval of the bond a commission is issued, signed by the Postmaster-General, dating from the date upon which the commission is issued.

ESTABLISHMENT OF POST-OFFICES.

It is the policy of this Bureau to establish a post-office wherever one is desired, if it is shown that it will accommodate a reasonable number of people, the practice of the Department being to give the people the most convenient mail facilities possible. It is believed that such a policy contributes to popular intelligence and good citizenship. When a substantial request is made for a new post-office, blanks covering the necessary inquiries are forwarded to the petitioners. When these papers are returned the petitioners are advised of the decision of the Department, and if establishment is deemed inadvisable the reasons are given.

The record of establishments during the last six fiscal years is as follows: 1897, 1,601; 1898, 3,601; 1899, 2,935; 1900, 3,600; 1901, 3,294; 1902, 3,038.

DISCONTINUANCE OF POST-OFFICES.

In case a post-office ceases to be a public necessity, or it is impossible to secure a suitable postmaster, it is discontinued. However, where the discontinuance of a post-office is contemplated on account of the death or resignation of the postmaster and failure to obtain a suitable candidate, a public notice is posted upon the door of the post-office for fifteen days notifying the patrons that unless the name of a suitable candidate is presented the office will be discontinued on a certain date. If, in the meantime, the people petition for its continuance, and recommend a desirable person for postmaster, he is appointed and the office is continued.

During the last fiscal year there was an increase of 1,022 discontinuances over the preceding fiscal year. The principal causes for the large increase in the number of post-offices discontinued have been the extension of the rural free-delivery service and the establishment of rural free-delivery stations in lieu of fourth-class post-offices, the extension of city delivery service so as to include offices adjacent to large Presidential offices, and the improvement of the public highways.

The extension of rural free delivery has resulted in the discontinuance of 1,906 post-offices during the year, the salaries of postmasters at said offices aggregating $116,807.

PRIVATE POST-OFFICES.

The usual diligence has been exercised in the suppression of private post-offices. Wherever it is found that a post-office is conducted for the sole benefit of some corporation, factory, nursery company, patent-medicine firm, or other private business institution, it is discontinued.

Such company or corporation usually has some one connected with it appointed postmaster, and the firm receives the benefit of the cancellations or the salary and allowances of the postmaster. To permit such post-offices to exist not only greatly reduces the revenues of the Department, but may be fruitful of fraud, and is, in the judgment of this Bureau, very much against public policy. In some instances these corporations or business institutions derived thousands of dollars of revenue from the Government, which virtually amounted to a commission or discount on their postal business.

Many such offices were discontinued during the year and the establishment of others refused.

DEATHS AND RESIGNATIONS OF POSTMASTERS.

Upon receiving notice of the death of a postmaster, a record of the same is made and the division of bonds and commissions is notified, which division then notifies the sureties that they are required to take possession of the office and appoint an acting postmaster, to serve until a successor to the deceased postmaster may be appointed. When the resignation of a postmaster is received it is filed, and steps are at once taken to secure a successor. During the year there were 73 resignations of Presidential postmasters and 44 deaths, an increase of 25 in the number of resignations and a decrease of 9 in the number of deaths as compared with the preceding fiscal year. There were 791 deaths of fourth-class postmasters and 8,660 resignations, a decrease of 104 in the number of deaths and 131 in the number of resignations as compared with the preceding fiscal year.

CHANGES IN NAMES AND SITES.

In the naming of post-offices it is the policy of the Bureau to give plain, simple names, of a single word. This rule, however, is frequently interfered with by local conditions. A sentiment emanating from some historical incident, or business interests of the locality, may create in the minds of the people a desire for a special name that does not conform to the rule, and in deference to this sentiment or interest the Bureau often finds it necessary to make exceptions to the rule.

In numerous instances a post-office bears a different name from that of the village or community where it is located. Such a condition always causes more or less confusion in the delivery of the mails, and this Bureau endeavors to bring about such changes as will make the names uniform. Considerable difficulty has been experienced in the West in connection with the opening up of new country, the building of railroads, and the location of town sites. In some cases a railroad or town-site company will locate a town and incorporate it under a certain name without reference to the Post-Office Department to ascertain whether it will be practicable to give the post-office the same name. The managers of some of the railroads, however, before naming a new station, inquire of the Department whether certain names will be approved for post-offices in the State in which the station is to be located.

In the changing of the sites of fourth-class post-offices the greatest convenience to the largest number of patrons is considered. In many cases bitter controversies arise over the location of a post-office, and it is found necessary to detail an inspector to make an investigation of the matter in person.

COMPLAINTS AGAINST POSTMASTERS.

The number of complaints against postmasters has been about the same during the fiscal year as in former years. Whenever it appears from their nature that they are worthy of consideration careful attention is given the same, and if the gravity of the case warrants it is referred to an inspector for investigation. When a postmaster violates the postal laws and regulations, and the offense does not seem of sufficient gravity to warrant his removal from office, an official reprimand is forwarded to the postmaster, a copy of which is filed with the division of appointments against his record.

The following tables and explanatory notes in connection therewith give a comprehensive idea of the work done in the appointment division for the fiscal year:

OPERATIONS OF THE DIVISION OF APPOINTMENTS.

Post-offices established, discontinued, advanced to Presidential grade, relegated to fourth class, total number of offices, etc.

	June 30—		Increase.	Decrease.
	1901.	1902.		
Post-offices established	3,294	3,038	.....	256
Post-offices discontinued	3,037	4,059	1,022	.....
Fourth-class offices advanced to Presidential	257	294	37	.....
Presidential offices relegated to fourth class	11	7	.....	4
Number of Presidential offices	4,466	4,731	265	.....
Number of fourth-class offices	72,479	71,193	.....	1,286
Total number of offices	76,945	75,924	.....	1,021

APPOINTMENTS DURING THE YEAR.

Presidential offices:				
On resignations	48	73	25	.....
On deaths	53	44	.....	9
On expiration of terms	184	1,892	1,708	.....
On removals	49	54	5	.....
On offices becoming Presidential	255	307	52	.....
Total number of Presidential appointments during the year	589	2,370	1,790	9
Fourth-class offices:				
On resignations	8,791	8,660	.....	131
On deaths	895	791	.....	104
On removals at expiration of four years' service	1,394	1,391	.....	3
On removals	687	714	27	.....
On offices relegated from Presidential to fourth class	11	6	.....	5
On establishments	3,290	3,038	.....	252
Total number of fourth-class appointments	15,068	14,600	27	495
Total number of appointments	15,657	16,970	.....	.....

ESTABLISHMENTS, DISCONTINUANCES, AND CHANGES OF NAMES AND SITES.

Total number of post-offices established during the year	3,038
Total number of post-offices discontinued during the year	4,059
Total number of names and sites changed	2,907

TABLE A.—*Showing number of appointments at Presidential offices during the year, by States and Territories.*

States and Territories.	Resigned.	Commissions expired.	Removed.	Deceased.	Offices become Presidential.	Total number of cases.
Alabama		22	2	2	4	30
Alaska		8			1	1
Arizona	1	8			1	10
Arkansas	4	30	1	1	1	37
California	4	47	2		9	62
Colorado	2	21	1		2	26
Connecticut	1	27		2	3	33
Delaware		3	1		1	5
District of Columbia						
Florida		13	1	1	3	18
Georgia		24	1	2	9	36
Idaho	2	6			4	12
Illinois	1	154	3	3	14	175
Indiana	3	102	2		8	115
Indian Territory		5	1	1	8	15
Iowa	4	123	1	2	16	146
Kansas	2	83		2	13	100
Kentucky		37		1	7	45
Louisiana	1	8		2	3	14
Maine	1	27		2	3	33
Maryland		4	1		3	8
Massachusetts	2	64		1	9	76
Michigan	2	100	1		14	117
Minnesota	6	47	1	1	7	62
Mississippi		21	7	1	4	33
Missouri	4	87	1	1	9	102
Montana	3	10			2	15
Nebraska	4	62	1	1	6	74
Nevada		3		1	1	5
New Hampshire	1	27		2	4	34
New Jersey	1	40	2		7	50
New Mexico	1	7	1		1	10
New York		112	1	4	22	139
North Carolina		19	2	1	4	26
North Dakota		14			5	19
Ohio	3	106	2	3	11	125
Oklahoma	1	11	1	1	8	22
Oregon		5			1	6
Pennsylvania	5	101	4	1	25	139
Rhode Island		2			1	3
South Carolina		9	3	1	3	16
South Dakota		23			7	30
Tennessee	2	33	2	1	1	39
Texas	3	65	2	1	15	86
Utah		5	1		1	7
Vermont	1	18			3	22
Virginia		43	1		3	47
Washington	3	18	3		6	30
West Virginia	1	20		1	7	29
Wisconsin		66		1	6	73
Wyoming		7			1	10
Hawaii	2		1			3
Total	73	1,892	54	44	307	2,370

TABLE B.—*Showing the number of fourth-class appointments, establishments, and discontinuances, by States and Territories.*

States and Territories.	Resignations.	Removals at expiration of four years.	Removals.	Deaths.	Relegated from Presidential.	Established.	Discontinued.	Total number of cases.
Alabama	337	30	26	39	.....	89	140	661
Alaska	12	.....	2	.....	.....	25	5	44
Arizona	48	4	3	3	.....	17	10	85
Arkansas	345	22	12	30	.....	107	68	584
California	211	13	15	24	1	60	43	367
Colorado	125	20	25	6	.....	41	38	255
Connecticut	25	6	1	2	.....	3	20	57
Delaware	9	.....	.....	3	.....	1	29	42
District of Columbia	1	.....	.....	.....	.....	.....	.....	1
Florida	160	17	19	10	.....	66	65	337
Georgia	324	43	25	30	1	95	240	758
Idaho	88	6	10	6	.....	35	17	162
Illinois	221	66	14	27	.....	25	108	461
Indiana	253	46	17	19	.....	33	152	520
Indian Territory	141	6	6	3	.....	69	21	246
Iowa	215	28	11	13	.....	17	127	411
Kansas	192	40	15	12	.....	26	110	395
Kentucky	460	44	24	35	.....	186	100	849
Louisiana	178	9	12	5	.....	58	40	302
Maine	74	14	4	13	.....	25	55	185
Maryland	92	27	11	17	.....	18	115	280
Massachusetts	31	7	1	5	.....	3	20	67
Michigan	169	49	12	10	1	43	141	425
Minnesota	187	17	12	12	1	68	107	404
Mississippi	270	47	41	23	.....	154	58	593
Missouri	416	32	36	26	.....	82	175	767
Montana	76	10	14	3	.....	56	35	194
Nebraska	130	31	9	12	.....	27	49	258
Nevada	24	1	2	.....	.....	9	9	45
New Hampshire	53	4	1	14	.....	3	16	91
New Jersey	41	19	3	16	.....	5	28	112
New Mexico	71	13	10	4	.....	45	11	154
New York	221	55	19	35	.....	51	234	615
North Carolina	286	119	41	40	.....	216	169	871
North Dakota	80	11	12	4	.....	52	14	173
Ohio	328	67	19	28	.....	38	230	710
Oklahoma	174	19	6	3	.....	193	46	441
Oregon	127	6	9	3	.....	38	35	218
Pennsylvania	431	114	26	55	1	85	175	887
Rhode Island	7	3	1	1	.....	2	4	18
South Carolina	119	15	9	18	.....	53	161	375
South Dakota	111	15	1	6	.....	24	35	192
Tennessee	282	55	33	39	.....	100	233	742
Texas	495	74	53	35	.....	205	148	1,010
Utah	34	6	2	1	.....	6	14	63
Vermont	35	8	5	5	.....	8	31	92
Virginia	276	63	33	41	.....	159	81	653
Washington	127	20	12	12	.....	75	39	285
West Virginia	313	34	16	19	.....	162	57	601
Wisconsin	166	25	9	16	1	47	148	412
Wyoming	49	9	6	4	.....	21	23	112
Guam	.....	.....	.....	.....	.....	1	.....	1
Hawaii	11	1	.....	2	.....	6	6	26
Porto Rico	9	1	9	2	.....	5	2	28
Total	8,660	1,391	714	791	6	3,038	4,037	18,637

TABLE C.—*Number of Presidential offices in the United States, by classes, showing increase or decrease as compared with previous year.*

States and Territories.	First class.	Second class.	Third class.	June 30—		Increase.	Decrease.	Consolidated and discontinued.
				1902.	1901.			
Alabama	3	6	40	49	48	1	.....	2
Alaska	.....	.....	4	4	2	2	.....	.....
Arizona	.....	4	15	19	18	1	.....	.....
Arkansas	1	8	46	55	53	2	.....	.....
California	5	32	105	142	136	6	.....	1
Colorado	3	16	34	53	53	.....	.....	.....
Connecticut	8	19	58	85	83	2	.....	.....
Delaware	1	1	12	14	14	.....	.....	.....
District of Columbia	1	.....	1	2	2	.....	.....	.....
Florida	1	9	29	39	36	3	.....	.....
Georgia	4	12	52	68	58	10	.....	.....
Idaho	.....	5	19	24	20	4	.....	.....
Illinois	15	62	224	301	287	14	.....	.....
Indiana	9	52	115	176	169	7	.....	.....
Indian Territory	.....	3	28	31	22	9	.....	.....
Iowa	9	45	211	265	250	15	.....	.....
Kansas	3	30	118	151	137	14	.....	.....
Kentucky	4	14	56	74	68	6	.....	.....
Louisiana	2	6	30	38	35	3	.....	.....
Maine	3	16	52	71	69	2	.....	.....
Maryland	1	7	26	34	31	3	.....	.....
Massachusetts	17	61	101	179	174	5	.....	5
Michigan	11	47	158	216	207	9	.....	.....
Minnesota	4	18	132	154	149	5	.....	.....
Mississippi	.....	10	47	57	54	3	.....	.....
Missouri	5	29	129	163	158	5	.....	3
Montana	2	7	20	29	25	4	.....	.....
Nebraska	3	11	106	120	115	5	.....	.....
Nevada	.....	1	9	10	9	1	.....	.....
New Hampshire	2	13	37	52	48	4	.....	.....
New Jersey	12	45	63	120	117	3	.....	6
New Mexico	.....	3	11	14	13	1	.....	.....
New York	24	105	250	379	358	21	.....	1
North Carolina	4	9	50	63	62	1	.....	.....
North Dakota	1	4	37	42	37	5	.....	.....
Ohio	13	67	168	248	236	12	.....	.....
Oklahoma	.....	7	29	36	29	7	.....	.....
Oregon	1	7	29	37	36	1	.....	.....
Pennsylvania	15	96	233	344	323	21	.....	3
Rhode Island	3	5	15	23	21	2	.....	.....
South Carolina	2	5	31	38	36	2	.....	.....
South Dakota	1	7	48	56	51	5	.....	.....
Tennessee	4	5	52	61	60	1	.....	.....
Texas	7	29	145	181	164	17	.....	.....
Utah	1	3	12	16	15	1	.....	.....
Vermont	1	9	36	46	45	1	.....	1
Virginia	3	16	50	69	67	2	.....	.....
Washington	3	7	42	52	47	5	.....	.....
West Virginia	2	10	41	53	45	8	.....	.....
Wisconsin	5	34	115	154	150	4	.....	.....
Wyoming	.....	3	12	15	14	1	.....	.....
Hawaii	1	1	3	5	6	.....	1	.....
Porto Rico	.....	2	2	4	4	.....	.....	.....
Total	220	1,023	3,488	4,731	4,466	266	1	22

Since June 30, 1897, when there were 3,762 Presidential post-offices, there has been an increase of 969 offices of this class, or about 26 per cent.

TABLE D.—*Number of fourth-class offices in the United States, showing money order and nonmoney order; also showing number established, discontinued, and the increase or decrease in fourth-class post-offices as compared with previous year.*

States and Territories.	Money order.	Nonmoney order.	Total fourth class.	Increase over 1901.	Decrease over 1901.	Established.	Discontinued.	Advanced to Presidential.	Relegated.
Alabama	670	1,884	2,554	.....	54	89	140	3	.....
Alaska	15	68	83	18	.....	25	5	2	.....
Arizona	89	137	226	6	.....	17	10	1	.....
Arkansas	491	1,491	1,982	37	.....	107	68	2	.....
California	847	693	1,540	10	.....	60	43	8	1
Colorado	338	363	701	3	.....	41	38	.....	.....
Connecticut	286	82	368	.....	19	3	20	2	.....
Delaware	57	68	125	.....	28	1	29	.....	.....
District of Columbia	1	3	4	.....	.....	.....	.....	.....	.....
Florida	413	709	1,122	.....	2	66	65	3	.....
Georgia	668	1,913	2,581	.....	155	95	240	11	1
Idaho	165	296	461	14	.....	35	17	4	.....
Illinois	1,167	994	2,161	.....	97	25	108	14	.....
Indiana	843	980	1,823	.....	126	33	152	7	.....
Indian Territory	158	418	576	39	.....	69	21	9	.....
Iowa	1,030	432	1,462	.....	125	17	127	15	.....
Kansas	770	600	1,370	.....	98	26	110	14	.....
Kentucky	593	2,597	3,190	80	.....	186	100	6	.....
Louisiana	359	891	1,250	15	.....	58	40	3	.....
Maine	453	690	1,143	.....	32	25	55	2	.....
Maryland	303	725	1,028	.....	100	18	115	3	.....
Massachusetts	444	190	634	.....	27	3	20	10	.....
Michigan	823	980	1,803	.....	107	43	141	10	1
Minnesota	641	853	1,494	.....	44	68	107	6	1
Mississippi	388	1,719	2,107	93	.....	154	58	3	.....
Missouri	1,174	1,554	2,728	.....	101	82	175	8	.....
Montana	168	330	498	17	.....	56	35	4	.....
Nebraska	488	423	911	.....	27	27	49	5	.....
Nevada	48	134	182	.....	1	9	9	1	.....
New Hampshire	252	240	492	.....	17	3	16	4	.....
New Jersey	410	357	767	.....	32	5	28	9	.....
New Mexico	109	250	359	33	.....	45	11	1	.....
New York	1,594	1,494	3,088	.....	205	51	234	22	.....
North Carolina	463	2,675	3,138	46	.....	216	169	1	.....
North Dakota	228	462	690	33	.....	52	14	5	.....
Ohio	1,279	1,584	2,863	.....	204	38	230	12	.....
Oklahoma	228	549	777	140	.....	193	46	7	.....
Oregon	332	524	856	2	.....	38	35	1	.....
Pennsylvania	2,375	2,326	4,701	.....	114	85	175	25	1
Rhode Island	75	43	118	.....	4	2	4	2	.....
South Carolina	258	1,039	1,297	.....	110	53	161	2	.....
South Dakota	247	369	616	.....	16	24	35	5	.....
Tennessee	473	2,234	2,707	.....	131	100	233	1	.....
Texas	1,074	1,990	3,064	40	.....	205	148	17	.....
Utah	128	196	324	.....	9	6	14	1	.....
Vermont	290	210	500	.....	25	8	31	2	.....
Virginia	745	932	3,677	76	.....	159	84	2	.....
Washington	354	514	868	31	.....	75	39	5	.....
West Virginia	350	1,740	2,090	97	.....	162	57	8	.....
Wisconsin	713	893	1,606	.....	105	47	148	5	1
Wyoming	88	236	324	.....	3	21	23	1	.....
Guam	1	.....	1	1	.....	1	.....	.....	.....
Hawaii	49	36	85	1	.....	6	6	.....	1
Porto Rico	29	48	77	3	.....	5	2	.....	.....
Tutuila (Samoan Islands)	1	.....	1	.....	.....	.....	.....	.....	.....
Total	26,035	45,158	71,193	835	2,121	3,038	4,037	294	7

The following table (E), with its comparisons, shows the number of Presidential post-offices in the various States and Territories and their numerical rank in the list, beginning with New York, the highest, and closing with the District of Columbia, the lowest. It also shows the population of the States and Territories and the numerical rank of the same, and a comparison of rank in Presidential post-offices and in population. The number of Presidential post-offices in a State may be safely regarded as an index of the industry and commercial activity of its people. The number of fourth-class post-offices may be largely

controlled by local circumstances. The character of the country roads in a State or Territory greatly influences the necessity for numerous post-offices for the convenience of the people in receiving their mails, and other similar circumstances may increase or decrease the number of fourth-class post-offices, but the number of Presidential offices is fixed largely by the amount of business done by the people.

TABLE E.—*Comparative statement showing the number of Presidential post-offices, by States and Territories, and the rank of each State; also the population of States and their rank.*

States and Territories.	Presidential post-offices.	Rank in number of Presidential post-offices.	Estimated population.	Rank in population.
New York	379	1	7,559,650	1
Pennsylvania	344	2	6,554,200	2
Illinois	301	3	5,062,627	3
Iowa	265	4	2,298,809	11
Ohio	248	5	4,265,641	4
Michigan	216	6	2,493,611	9
Texas	181	7	3,262,119	5
Massachusetts	179	8	2,945,613	7
Indiana	176	9	2,591,956	8
Missouri	163	10	3,199,865	6
Minnesota	154	11	1,873,992	19
Wisconsin	154	12	2,151,804	13
Kansas	151	13	1,485,200	22
California	142	14	1,559,306	21
Nebraska	120	15	1,067,366	27
New Jersey	120	16	1,996,689	15
Connecticut	85	17	944,757	30
Kentucky	74	18	2,211,589	12
Maine	71	19	701,411	31
Virginia	69	20	1,891,268	18
Georgia	68	21	2,304,984	10
North Carolina	63	22	1,950,624	16
Tennessee	61	23	2,081,234	14
Mississippi	57	24	1,613,321	20
South Dakota	56	25	413,617	39
Arkansas	55	26	1,350,911	25
Colorado	53	27	572,082	32
West Virginia	53	28	1,006,740	28
New Hampshire	52	29	419,820	38
Washington	52	30	564,732	34
Alabama	49	31	1,901,845	17
Vermont	46	32	346,046	42
North Dakota	42	33	363,826	41
Florida	39	34	565,540	33
Louisiana	38	35	1,450,706	23
South Carolina	38	36	1,380,525	24
Oregon	37	37	438,348	36
Oklahoma	36	38	426,214	37
Maryland	34	39	1,223,685	26
Indian Territory	31	40	392,060	40
Montana	29	41	279,828	45
Idaho	24	42	190,891	47
Rhode Island	23	43	449,984	35
Arizona	19	44	119,141	50
Utah	16	45	293,354	43
Wyoming	15	46	101,784	51
Delaware	14	47	188,430	48
New Mexico	14	48	205,076	46
Nevada	10	49	42,335	53
Hawaii	5	50	154,001	49
Alaska	4	51	63,592	52
Porto Rico	4	52	953,243	29
District of Columbia	2	53	289,867	44

TABLE F.—*Showing total number of fourth-class post-offices, by States and Territories, in numerical order, and the average compensation of fourth-class postmasters.*

States and Territories.	Fourth-class offices.	Average compensation of fourth-class postmasters.	Rank in number of fourth-class offices.	Rank in compensation of fourth-class postmasters.
Pennsylvania	4,701	$203.36	1	25
Virginia	3,677	118.26	2	48
Kentucky	3,190	101.59	3	52
North Carolina	3,138	97.43	4	54
New York	3,088	262.00	5	11
Texas	3,064	170.09	6	36
Ohio	2,863	209.05	7	24
Missouri	2,728	171.19	8	34
Tennessee	2,707	99.34	9	53
Georgia	2,581	123.99	10	45
Alabama	2,554	108.32	11	51
Illinois	2,161	266.21	12	10
Mississippi	2,107	114.29	13	49
West Virginia	2,090	124.77	14	44
Arkansas	1,982	121.22	15	47
Indiana	1,823	202.58	16	26
Michigan	1,803	234.89	17	15
Wisconsin	1,606	222.55	18	20
California	1,540	226.83	19	17
Minnesota	1,494	223.78	20	19
Iowa	1,462	315.67	21	5
Kansas	1,370	250.61	22	14
South Carolina	1,297	121.67	23	46
Louisiana	1,259	159.27	24	39
Maine	1,143	217.25	25	21
Florida	1,122	151.81	26	42
Maryland	1,028	174.95	27	32
Nebraska	911	282.05	28	8
Washington	868	187.38	29	28
Oregon	856	163.74	30	37
Oklahoma	777	170.35	31	35
New Jersey	767	285.51	32	7
Colorado	701	225.00	33	18
North Dakota	690	194.76	34	27
Massachusetts	634	371.73	35	2
South Dakota	616	216.79	36	22
Indian Territory	576	184.73	37	30
Vermont	500	261.04	38	12
Montana	498	187.08	39	29
New Hampshire	492	260.17	40	13
Idaho	461	172.30	41	33
Connecticut	368	344.75	42	4
New Mexico	359	154.90	43	40
Utah	324	215.07	44	23
Wyoming	324	153.66	45	41
Arizona	226	182.77	46	31
Nevada	182	159.92	47	38
Delaware	125	229.59	48	16
Rhode Island	118	359.63	49	3
Hawaii	85	287.99	50	6
Alaska	83	114.21	51	50
Porto Rico	77	266.39	52	9
District of Columbia	4	131.89	53	43
Tutuila (Samoan Islands)	1	490.00	54	1

TABLE G.—*Showing the gross receipts of post-offices, by States and Territories, arranged in order of rank in amount expended per capita in use of the mails; also the whole number of post-offices, by States and Territories, and their respective ranks.*

States and Territories.	Gross receipts at post-offices.	Average amount expended per capita.	Rank of States in expenditure per capita.	Whole number of post-offices.	Rank in number of post-offices.
District of Columbia	$924,246.96	$3.19	1	6	53
New York	20,881,386.93	2.76	2	3,467	3
Nevada	105,132.62	2.51	3	192	47
Illinois	12,439,169.36	2.46	4	2,462	12
Colorado	1,396,700.66	2.44	5	754	34
Massachusetts	7,101,607.60	2.41	6	813	32
California	3,396,458.89	2.18	7	1,682	20
Connecticut	1,869,115.27	1.98	8	453	42
Maine	1,241,180.38	1.77	9	1,214	25
Vermont	609,906.79	1.76	10	546	38
Washington	994,858.78	1.76	11	920	29
Montana	487,808.88	1.75	12	527	40
Rhode Island	767,964.15	1.71	13	141	48
Ohio	7,112,666.71	1.67	14	3,111	7
Pennsylvania	10,719,536.60	1.64	15	5,045	1
Wyoming	167,308.30	1.64	16	339	45
Missouri	5,177,522.91	1.62	17	2,891	8
New Hampshire	678,784.90	1.62	18	544	39
Minnesota	3,004,303.55	1.60	19	1,648	21
New Jersey	3,146,538.44	1.58	20	887	31
Oregon	693,057.53	1.58	21	893	30
Nebraska	1,650,286.24	1.55	22	1,031	28
Michigan	3,798,271.65	1.52	23	2,019	16
Maryland	1,818,559.92	1.49	24	1,062	27
Idaho	276,068.82	1.45	25	485	41
Arizona	198,864.96	1.42	26	245	46
Iowa	3,259,544.24	1.42	27	1,727	19
North Dakota	485,780.31	1.33	28	732	35
South Dakota	537,688.69	1.30	29	672	36
Wisconsin	2,790,613.43	1.30	30	1,760	18
Utah	379,206.91	1.29	31	340	44
Kansas	1,837,521.17	1.24	32	1,521	22
Oklahoma	505,677.78	1.19	33	813	33
Indiana	3,036,206.70	1.17	34	1,999	17
Florida	618,780.60	1.10	35	1,161	26
Delaware	206,101.91	1.09	36	139	49
New Mexico	179,228.10	.87	37	373	43
West Virginia	873,306.98	.87	38	2,143	14
Virginia	1,615,819.01	.85	39	3,746	2
Texas	2,693,252.52	.83	40	3,245	5
Indian Territory	306,798.26	.78	41	607	37
Louisiana	1,100,652.24	.76	42	1,288	24
Kentucky	1,635,613.78	.74	43	3,264	4
Hawaii	108,014.17	.70	44	90	50
Tennessee	1,437,517.89	.69	45	2,768	9
Georgia	1,571,989.36	.68	46	2,649	10
Arkansas	794,468.67	.59	47	2,037	15
Alaska	33,628.37	.53	48	87	51
North Carolina	1,031,815.73	.53	49	3,201	6
Alabama	948,818.70	.50	50	2,603	11
Mississippi	724,566.82	.45	51	2,164	13
South Carolina	586,370.50	.42	52	1,335	23
Porto Rico	77,124.05	.08	53	81	52

The above table is a fine index of the business transactions of the various States. In this table New York ranks first, barring the District of Columbia, with $2.76 per capita expended in the use of the mails, and South Carolina ranks lowest, excluding Porto Rico, with $0.42 per capita expended in the use of the mails.

TABLE H.—*Total number of cases of all kinds made up and acted upon by the Bureau for the fiscal year ended June 30, 1902.*

States and Territories.	Post-offices.				Fourth-class postmasters.			Presidential cases.					Relegated to fourth class.	Total number of cases.
	Established.	Discontinued.	Names and sites changed.	Appointments on changes of name and site.	Resigned.	Removed.	Deceased.	Resigned.	Commissions expired.	Removal.	Deceased.	Offices become Presidential.		
Alabama	89	142	141	(105)	337	56	39	....	22	2	2	4	....	834
Alaska	25	5	3	(3)	12	2	.....	.....	.....	.....	.....	1	....	48
Arizona	17	10	11	(6)	48	7	3	1	8	.....	.....	1	....	106
Arkansas	107	68	104	(74)	345	34	30	4	30	1	1	1	....	725
California	60	44	53	(28)	211	28	24	4	47	2	....	9	(1)	482
Colorado	41	38	32	(12)	125	45	6	2	21	1	....	2	....	313
Connecticut	3	20	1	(1)	25	7	2	1	27	....	2	3	....	91
Delaware	1	29	4	.....	9	.....	3	....	3	1	....	1	....	51
District of Columbia	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	2
Florida	66	65	58	(20)	160	36	10	....	13	1	1	3	....	413
Georgia	95	240	152	(98)	324	68	30	....	24	1	2	9	(1)	945
Idaho	35	17	52	(25)	88	16	6	2	6	.....	.....	4	....	226
Illinois	25	108	38	(10)	221	80	27	1	154	3	3	14	....	674
Indiana	33	152	60	(14)	253	63	19	3	102	2	....	8	....	695
Indian Territory	69	21	40	(8)	141	12	3	....	5	1	1	8	....	301
Iowa	17	127	28	(2)	215	39	13	4	123	1	2	16	....	585
Kansas	26	110	37	(21)	192	55	12	2	83	....	2	13	....	532
Kentucky	86	100	147	(74)	460	68	35	....	37	....	1	7	....	1,041
Louisiana	58	40	57	(21)	178	21	5	1	8	....	2	3	....	375
Maine	25	55	21	(2)	74	18	13	1	27	....	2	3	....	239
Maryland	18	115	21	(10)	92	38	17	....	4	1	....	3	....	309
Massachusetts	3	25	4	(1)	31	8	5	2	64	....	1	9	....	152
Michigan	43	141	62	(9)	169	61	10	2	100	1	....	14	(1)	603
Minnesota	68	107	71	(45)	187	29	12	6	47	1	1	7	(1)	536
Mississippi	151	58	99	(73)	270	88	23	....	21	7	1	4	....	725
Missouri	82	178	61	(30)	416	68	26	4	87	1	1	9	....	933
Montana	56	35	28	(19)	76	24	3	3	10	.....	.....	2	....	237
Nebraska	27	49	45	(32)	130	40	12	4	62	1	1	6	....	377
Nevada	9	9	11	(8)	24	3	.....	.....	3	....	1	1	....	61
New Hampshire	3	16	7	(1)	53	5	14	1	27	....	2	4	....	132
New Jersey	5	34	5	(1)	41	22	16	1	40	2	....	7	....	173
New Mexico	45	11	20	(7)	71	23	4	1	7	1	....	1	....	184
New York	51	235	73	(1)	221	74	35	....	112	1	4	22	....	828
North Carolina	216	169	188	(103)	286	160	40	....	19	2	1	4	....	1,085
North Dakota	52	14	40	(22)	80	23	4	....	14	.....	.....	5	....	232
Ohio	38	230	94	(27)	328	86	28	3	106	2	3	11	....	929
Oklahoma	193	46	96	(40)	174	25	3	1	11	1	1	8	....	559
Oregon	38	35	57	(39)	127	15	3	....	5	.....	.....	1	....	281
Pennsylvania	85	178	187	(79)	431	140	55	5	104	4	1	25	(1)	1,215
Rhode Island	2	4	1	(1)	7	4	1	....	2	.....	.....	1	....	22
South Carolina	53	161	40	(18)	119	24	18	....	9	3	1	3	....	431
South Dakota	24	35	47	(32)	111	16	6	....	23	.....	.....	7	....	269
Tennessee	100	233	129	(27)	282	88	39	2	33	2	1	1	....	910
Texas	205	148	122	(65)	495	127	35	3	65	2	1	15	....	1,218
Utah	6	14	20	(12)	34	8	1	....	5	1	....	1	....	90
Vermont	8	32	3	.....	35	13	5	1	18	.....	.....	3	....	118
Virginia	159	81	83	(42)	276	96	41	....	43	1	....	3	....	783
Washington	75	39	60	(32)	127	32	12	3	18	3	....	6	....	375
West Virginia	162	57	111	(53)	313	50	19	1	20	.....	1	7	....	741
Wisconsin	47	148	40	(13)	166	34	16	....	66	....	1	6	(1)	524
Wyoming	21	23	32	(17)	49	15	4	2	7	.....	.....	1	....	154
Guam	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Hawaii	6	6	8	(1)	11	1	2	2	.....	1	.....	.....	.....	37
Porto Rico	5	2	.....	.....	9	10	2	.....	.....	.....	.....	.....	.....	28
Total	3,078	4,059	2,907	(1,387)	8,660	2,105	791	73	1,892	54	44	307	(6)	23,930

TABLE I.—*Total number of post-offices in the United States on June 30 of each year since 1790.*

Year.	Number.	Year.	Number.	Year.	Number.	Year.	Number.	Year.	Number.	Year.	Number.
1790	75	1813		1836	11,091	1859	28,539	1882		46,231	
1791	89	1814	2,670	1837	11,767	1860	28,498	1883		46,820	
1792	195	1815	3,000	1838	12,519	1861	28,586	1884		48,434	
1793	209	1816	3,260	1839	12,780	1862	28,875	1885		51,252	
1794	450	1817	3,459	1840	13,468	1863	29,047	1886		53,614	
1795	453	1818	3,618	1841	13,778	1864	28,878	1887		55,157	
1796	468	1819	4,000	1842	13,733	1865	20,550	1888		57,376	
1797	554	1820	4,500	1843	13,814	1866	23,828	1889		58,999	
1798	639	1821	4,650	1844	14,103	1867	25,163	1890		62,304	
1799	677	1822	4,709	1845	14,183	1868	26,181	1891		64,329	
1800	903	1823	4,043	1846	14,601	1869	27,196	1892		67,119	
1801	1,025	1824	5,182	1847	15,146	1870	28,492	1893		68,403	
1802	1,114	1825	5,677	1848	16,159	1871	30,945	1894		69,805	
1803	1,258	1826	6,150	1849	16,749	1872	31,863	1895		70,064	
1804	1,405	1827	7,300	1850	18,417	1873	33,244	1896		70,360	
1805	1,558	1828	7,530	1851	19,796	1874	34,294	1897		71,022	
1806	1,710	1829	8,004	1852	20,901	1875	35,547	1898		73,570	
1807	1,848	1830	8,450	1853	22,320	1876	36,382	1899		75,060	
1808	1,944	1831	8,686	1854	23,548	1877	37,345	1900		76,688	
1809	2,012	1832	9,205	1855	24,410	1878	38,253	1901		76,945	
1810	2,300	1833	10,127	1856	25,565	1879	40,388	1902		75,924	
1811	2,403	1834	10,693	1857	26,586	1880	42,989				
1812	2,610	1835	10,770	1858	27,977	1881	44,512				

The foregoing table is given as a matter of interesting statistics, and shows the gradual increase in the number of post-offices from the establishment of the postal service to 1901. The records of this Bureau fail to give the number of offices in existence in 1813. With the exception of a slight decline in 1842, the table shows a steady increase from 1790 to 1859. Between the years of 1859 and 1870, owing to the disorganized condition of the postal service in the Southern States, caused by the rebellion, the steady advancement in the number of offices was arrested, but from 1870 to 1901 there was a steady and rapid increase in the number of offices established, indicating the rapid progress our country has made, not only in population, but in material strength and power. The decrease in 1902 was caused by the extension of the rural free-delivery service as a substitute for many country post-offices.

In the year 1790 there were 75 post-offices in operation. At that time the population of the thirteen States which then constituted the Union was 3,929,214, or, for convenience, stating it in round numbers, there were 3,930,000 people, served by 75 post-offices, an average of 1 office to 52,400 people. Since that time the offices have been multiplied over 1,000 times, while the population has multiplied over 20 times.

The following table will be interesting, showing the population, in round numbers, by decades, since 1790, the number of post-offices in operation for the same years, and the average number of persons to each office:

Year.	Population.	Number of post-offices.	Average number of persons to each office.
1790	3,930,000	75	52,400
1800	5,310,000	903	5,880
1810	7,240,000	2,300	3,148
1820	9,630,000	4,500	2,140
1830	12,870,000	8,450	1,521
1840	17,070,000	13,468	1,267
1850	23,190,000	18,417	1,259
1860	31,640,000	28,498	1,110
1870	38,560,000	28,492	1,353
1880	50,150,000	42,989	1,166
1890	62,620,000	62,401	1,003
1900	76,295,000	76,688	995
1902[a]	[b]80,236,000	75,924	1,058

[a] Estimated. [b] Including Hawaii and Porto Rico.

THE DIVISION OF BONDS AND COMMISSIONS.

The division of bonds and commissions is intrusted with the custody of all bonds of postmasters, and keeps the records pertaining thereto. It also prepares all commissions of postmasters for the signature of the Postmaster-General and the President, and keeps all records relating to said commissions.

In this division notices of appointment to newly appointed postmasters are prepared and forwarded, with blank bonds and oaths, for execution. A record is kept of the names of all postmasters, with the dates of their appointment and the names of their sureties.

BONDS.

Bonds of all postmasters, after execution, are referred to this division for examination, and if found in proper form they are submitted to the Fourth Assistant Postmaster-General for approval. Upon the approval of the bonds commissions are prepared, and then the bonds are filed alphabetically by States. Questions touching the validity of a bond are reported from this division, and if for any reason the sufficiency of the bond is in doubt, an inspector is directed to examine into its validity and the responsibility of the sureties. The United States statutes provide that postmasters shall furnish new bonds every four years. Upon the death of a surety it is the postmaster's duty to report the same immediately to the Department, and he is required to furnish a new bond.

Upon the establishment of a post-office the person appointed postmaster is required to furnish a bond of the penalty of $500. As the business of the office increases, this penalty is from time to time increased. The amount of penalty is based upon the quantity of supplies carried in the office. When an office becomes of such size and importance as to require money-order facilities, a new bond, covering the money-order business, is called for. The amount of the penalty of the bond for postal funds is determined from the report of the Third Assistant Postmaster-General, showing the amount of supplies furnished, and it is not expected that a postmaster will have stamps and other supplies on hand amounting to more than three-fourths of the penalty of the bond. The amount of money-order penalty is determined from the report of the money-order division of the office of the First Assistant Postmaster-General. Postmasters are required to make their deposits promptly, and consequently should never have a greater amount of money-order funds on hand than will meet the daily demands upon the office, and the amount of the bond is therefore fixed to cover possible contingencies.

When the Third Assistant Postmaster-General finds that the value of supplies ordered by any postmaster amounts to more than three-fourths of the penalty of his bond, he so advises the division of bonds and commissions, and the postmaster is called on to furnish a new bond with an increase of penalty. The various causes for which new bonds are required are as follows: Renewals at the end of every four years; upon the death of a surety; upon the request of a surety to be released from a bond; upon the report of an inspector that for any reason the bond is found to be insufficient; and upon the insufficiency of the penalty covering the postal and money-order funds.

SURETIES ON BONDS.

By the act of Congress approved August 13, 1894, authority was given the departments in Washington to accept bonds executed by surety and trust companies for such Government officials as are required by law to furnish a guaranty for faithful performance of duty. This act has had a limited application to postmasters' bonds. The Postal Laws and Regulations require that every postmaster's bond shall be executed by not less than two sureties, and the Postmaster-General has wisely insisted that at least one of them shall be a patron of the office in question. The bonds of surety and trust companies are accepted from postmasters at offices of the first and second classes for half the penalty, provided the company is incorporated under the laws of the State in which the office is located. Personal sureties are preferable, however, because collections can be much more promptly and satisfactorily made. Bond companies sometimes resort to legal quibbles and technicalities to delay or evade payment when losses occur, while private citizens, when presented with the proof that the guaranteed is in default, as a rule promptly meet the obligation and pay the loss.

Another feature of the desirability of personal sureties is that defaults are less liable to occur when the bonded official realizes that he is involving his neighbors and personal friends in serious financial loss. When citizens of a community and patrons of the post-office are on the bond of the postmaster, and are therefore responsible for his conduct, they are quick to observe any suspicious practices or habits on the part of the postmaster, and frequently report to the Department the result of their observations, which always leads to prompt investigation. Surety and trust companies are not accepted on the bonds of postmasters at third and fourth class offices.

The policy that requires a postmaster to furnish bondsmen from among his neighbors doubtless protects the Department in many instances from securing incompetent and unworthy postmasters, and in case of death, or of defalcation or other violations of the Postal Laws and Regulations, it is a matter of great convenience that the inspector can call immediately upon the bondsmen and require them to make good the shortage or take immediate possession of the office, designating some one to act as postmaster who will conduct the business to the satisfaction of the Department and the community until a successor may be appointed. At least two sureties are required on every bond, and the aggregate amount in which these sureties qualify must be double the amount of the penalty of the bond. The aggregate amount of the penalties of all postmasters' bonds now in force is about $120,000,000.

The penalties of the bonds which were approved during the fiscal year 1902 amounted to $58,810,800, as compared with $29,715,246 for the preceding fiscal year, an increase of nearly 100 per cent. This increase was due to the large number of Presidential postmasters appointed, necessitating the filing of many bonds of large amounts.

The law of Congress which requires the bonding of clerks direct to the Government has resulted in serious embarrassment in a number of instances in the collection of losses from postmasters, the postmasters alleging that since the clerk is bonded direct to the Government the clerk is responsible for the loss and not the postmaster. Such a claim, in the judgment of the Department, is not valid, and postmasters are

held for such losses. Prior to the passage of this law, however, there was no question as to the liability of postmasters for the defalcation of clerks, since clerks were not bonded to the Department but to the postmasters whenever they saw fit to require bonds of clerks handling the funds of the office. The old practice was much more satisfactory, and collections were more easily and promptly made.

If for any reason whatever the Department deems it necessary for a postmaster to furnish a new bond he is at once notified, and if he fail after two notices to furnish a new bond, the same is reported to the division of appointments, where a case is made up for the removal of the postmaster.

In addition to the bonds and oaths of office, a great many blanks and circulars are sent out from this division. The whole number of blank forms in use in the division is 75. The number of all these sent out during the fiscal year was 193,815. Thirty-two thousand two hundred and four blank bonds were forwarded to postmasters for execution; of these, 11,920 were received improperly executed and were returned for correction.

The oaths of all clerks and assistant postmasters in all post-offices are filed in this division. Of these there were received and filed during the year 39,731.

The apparent discrepancy, as shown in the attached table, between the number of cases received from the division of appointments and the number of appointment bonds examined and passed for approval grows out of the fact that all the cases made up for the discontinuance of post-offices and for changes of site have to be handled in the bond division as well as in cases of appointment.

It sometimes occurs that a postmaster resigns and abandons his office, and the appointment of a successor does not immediately follow. In such cases, and also in case of the death of postmasters, it devolves upon the bondsmen to select someone who shall act as postmaster until a new appointment may be made. The bond of the postmaster is held to be in force until such time as the new appointee qualifies, receives his commission, and takes charge of the office.

RECORDS OF THE DIVISION.

For convenient reference, a record of the bonds of Presidential postmasters is kept in a separate book from those in which the record of fourth-class bonds is kept, the names of the postmasters being arranged alphabetically and according to the dates of appointment. In addition, the names of the Presidential postmasters are entered in another book by States and Territories, the offices being arranged in alphabetical order.

In fourth-class cases a record is kept of the bonds of all postmasters in alphabetical order. There is also a record in which the post-offices are arranged alphabetically by counties and States with the names of the postmasters and dates of appointment.

REPORTS.

From the bond division reports of its operations are made as required by law, as follows: Daily, to the division of post-office supplies, to the Superintendent of the Money-Order System, and to the Superintendent of Free Delivery, in the office of the First Assistant Postmaster-

General; to the contract and equipment divisions, in the office of the Second Assistant Postmaster-General; to the stamp division, in the office of the Third Assistant Postmaster-General, and to the General Superintendent of the Railway Mail Service, in the office of the Second Assistant Postmaster-General, for publication in the Daily Bulletin, and weekly to the Auditor for the Post-Office Department.

COMMISSIONS.

Three classes of commissions are issued—Presidential recess, Presidential confirmation, and fourth class—and the preparation of these is assigned to the bond division. Commissions to postmasters of the Presidential class are signed by the President and countersigned by the Postmaster-General. Except in recess appointments, Presidential commissions are for a period of four years. Recess appointments are those made by the President during recess of Congress, and commissions issued upon such appointments are in force until the adjournment of the first session of the Senate after the appointment, or until such time as the Senate may confirm the appointee, if such commission is not sooner revoked by the President. Commissions to postmasters of the fourth class are signed only by the Postmaster-General, and run for no definite length of time, but expire at the will of the Postmaster-General.

The work of the division has been largely increased by the operation of a provision of the legislative, executive, and judicial appropriation act for the fiscal year ended June 30, 1896, which provides for an examination into the validity of all bonds of postmasters once every two years, and for the renewal of all such bonds at the expiration of every four years.

Prior to the passage of this act the bonds of all postmasters of the fourth class, excepting those of money-order offices, were deemed to be sufficient upon the certificate of the officer qualifying the sureties, and only in special cases was investigation made by the Department as to the responsibility of such sureties.

The examinations required under this provision are made through the force of post-office inspectors, and they necessarily entail upon that force, as well as upon the division of bonds and commissions, a vast amount of additional work. The bonds of all postmasters at offices of the first, second, and third classes, as well as at money-order offices of the fourth class, after being approved by the Department, are submitted to the inspectors' division for a report as to its sufficiency. Much added labor, of course, also devolves upon this division through the requirement for a renewal of all bonds every four years.

During the fiscal year the Senate confirmed the appointment of 2,573 postmasters, the largest number in any one year in the history of the Department.

The number of postmasters reported by the Auditor for the Post-Office Department for informalities or delinquencies during each of the last five fiscal years is as follows: 1898, 831; 1899, 423; 1900, 231; 1901, 461; 1902, 503.

The number of notices sent to sureties notifying them of failure of postmasters to comply with the postal regulations in making their returns to the Auditor, or of their delinquencies, for each of the last five fiscal years is as follows: 1898, 2,362; 1899, 1,101; 1900, 510; 1901, 922; 1902, 993.

The following table is submitted, showing in detail the amount of work accomplished by this division during the year:

Report showing the amount and character of work done in the bond division for the fiscal year ended June 30, 1902.

CASES RECEIVED.

Number of cases received from appointment division:	
Presidential	2,565
Fourth class, money order	4,830
Fourth class, not money order	16,730
Total	24,125

BONDS APPROVED.

Number of bonds examined and passed for approval of the Postmaster-General:	
Presidential	2,527
Fourth class, money order	12,968
Fourth class, not money order	13,828
Total	29,323

NEW BONDS.

New bonds sent by order of the Postmaster-General	9,795
New bonds sent upon request of sureties	802
New bonds sent upon request of postmasters	1,416
New bonds sent upon request of the Third Assistant Postmaster-General	5
New bonds sent upon report of post-office inspectors	546
New bonds sent for establishment of new money-order offices	3,848
Total sent	16,412
Less number of new bonds sent and for various reasons not yet returned	2,881
Whole number received	13,531
Total number of new bonds received, reported, and filed:	
Presidential	197
Fourth class, money order	9,018
Fourth class, not money order	4,316
Total	13,531

NEW BONDS AND APPOINTMENT BONDS.

Total number of bonds received, reported, and filed:	
New bonds	13,531
Appointment bonds	15,792
Total	29,323

BONDS RETURNED.

Bonds returned for correction	11,920
Duplicate bonds issued	3,719

OATHS AND NOTICES.

Oaths of clerks and assistant postmasters received and filed	39,731
Surety notices sent to the chief post-office inspector for investigation	14,632
Post-office inspectors' reports on sufficiency of bonds received	11,154
Number of blank oaths sent by request of postmasters	34,828

INFORMALITIES REPORTED.

Number of postmasters reported by the Auditor for informalities or delinquencies	503
Number of notices sent to sureties notifying them of failure of postmasters to comply with the postal regulations in making their returns to the Auditor, or of their delinquencies	993

Statement showing the number and character of the various reports made to the several bureaus of the Department for the fiscal year ended June 30, 1902.

Commissioned postmasters reported to the Auditor and the Third Assistant Postmaster-General, and for publication in the Postal Bulletin:	
Presidential	2,330
Fourth class, money order	3,950
Fourth class, not money order	9,512
Total	15,792
New bonds reported to the Auditor	13,531
New bonds reported to the Third Assistant Postmaster-General	2,908
Number of discontinued post-offices reported to the Auditor and the Third Assistant Postmaster-General	3,840
Number of acting postmasters reported to the Auditor and the Third Assistant Postmaster-General	813
Number of acting postmasters reported to the Superintendent of the Money-Order System	369
Number of establishments and changes of name and site of post-offices reported to the equipment division and to the division of post-office supplies	4,066

Penalty of bonds approved for year ended June 30, 1902.

Presidential	$31,759,000
Fourth class, money order	$20,137,800
Fourth class, not money order	$6,914,000
Total penalty	$58,810,800
Average penalty of bonds approved this year:	
Presidential	$12,571
Fourth class, money order	$1,630
Fourth class, not money order	$500
Number of blank forms in use	75
Number of blanks sent out	193,815

DIVISION OF POST-OFFICE INSPECTORS AND MAIL DEPREDATIONS.

The division of post-office inspectors and mail depredations consists of post-office inspectors, under the charge of the Chief Post-Office Inspector, and the division of mail depredations, under charge of a chief clerk, where the records of all depredations upon the mails are kept.

During the fiscal year a larger number of post-office inspectors was employed than during any other year in the history of the postal service. Numerous irregularities were discovered in remote country post-offices, which our inspectors have been unable to reach in former years. In some instances frauds were detected and large amounts of money collected from dishonest officials, which would not have been discovered had it not been for the unusual vigilance required of the inspectors' force during the year. Certain kinds of crime against the postal laws seem to be on the increase, such as the burglarizing of post-offices and the robbery of mail boxes. There has, however, been an increase in the number of arrests and convictions for all offenses, the percentage being 6.8 on arrests and 13.4 on convictions.

The general direction of the force of inspectors and the supervision of all matters pertaining to this branch of the service is vested in the Chief Inspector, with headquarters at the Department. For convenience and efficiency, the territory of the United States has been apportioned into fifteen divisions, each having an inspector in charge, who has the general direction of all matters referred to him and of the

inspectors assigned to his division. The results of field investigations and the correspondence from the inspectors are transmitted to the Department through the several inspectors in charge.

The duties performed by post-office inspectors embrace a wide scope and are of great importance to the welfare and integrity of the postal service. They are charged with all investigations in relation to complaints against postmasters and other employees of the postal service, allowances for clerk hire and other expenses for post-offices, the collection of balances due the United States by delinquent and retiring postmasters, and establishment or discontinuance of post-offices, postal stations, money-order offices, and free-delivery service; determining the responsibility of sureties on the official bonds of postmasters at money-order offices, the inspection of the accounts and the management of post-offices, the instruction of postmasters and other employees in the regulations and usages of the service, investigations pertaining to the burning of post-offices, losses of mail locks and keys; the location, change of name or site of post-offices; the wrong payment of money orders, and many cases relating to detentions, losses, and irregularities in the registered and ordinary mails, and other violations of the postal laws, as well as special investigations, which may be assigned them by the Postmaster-General and the Fourth Assistant Postmaster-General.

During the year, 182,705 cases have been referred to the inspectors' division for investigation. The entire number investigated was 175,425, but there were left over from the fiscal year 1901, 87,327 cases, so that we had on hand on July 1, 1902, 94,607 cases.

The division of mail depredations, under the direction of a chief clerk, is located in the Department, and is charged with the records, accounts, and correspondence pertaining to this arm of the service. In order that a complete record may be kept every complaint or inquiry received at this office is jacketed, briefed, and numbered, and for the sake of convenience these complaints and inquiries are divided into classes, as follows:

A.—Complaints relating to the registered mail.

B. Complaints relating to the ordinary mail, or that which is not registered.

C. Miscellaneous complaints and inquiries affecting the business or employees of the postal service and violations of the postal laws.

D. Matters pertaining to highway robberies of the mails, robberies of post-offices, and other special depredations.

F.—Complaints and inquiries affecting mail matter dispatched to and received from foreign countries.

R.—Matters pertaining to claims for reward for the arrest and conviction of persons violating the postal laws.

On January 1, 1902, an improved system of keeping the records pertaining to cases embraced in Class C was introduced, by reason of which legibility and uniformity of retained copies have resulted.

Prior to January 1, 1902, all cases relating to inspections of money-order post-offices and to responsibility of sureties on postmasters' bonds were embraced in Class C. These cases had grown so numerous that it was deemed expedient for the sake of distinction and easy reference to include them in separate classes. Therefore on the above-mentioned date cases relating to the inspection of money-order post-offices were included in Class I and those relating to the responsibility

of sureties on postmasters' bonds were included in Class S. These new classes of cases (I and S) appear in the present annual report as "Forms I and S" under Class C, because they were in use only a portion of the fiscal year just closed. They will, however, be designated as separate classes in the next annual report.

The total number of cases of all classes made up during the last fiscal year aggregated 182,705, and the total number disposed of 175,425. The cases investigated and closed during the year consisted of 8,233 A cases, 86,790 B cases, 52,056 C cases, 4,715 D cases, 23,515 F cases, and 116 R cases. There were on hand undisposed of on July 1, 1902, 3,201 A cases, 55,521 B cases, 29,532 C cases, 1,493 D cases, 4,794 F cases, and 66 R cases, or a total of 94,607 cases.

The totals of cases referred during the last five fiscal years were as follows: In 1898, 112,120; in 1899, 144,758; in 1900, 197,996; in 1901, 178,514; in 1902, 182,705, and the total number of cases closed in 1898 was 114,824; in 1899, 115,846; in 1900, 169,505; in 1901, 179,084; in 1902, 175,425. The number remaining on hand in 1898 was 30,342; in 1899, 59,254; in 1900, 87,897; in 1901, 87,327; in 1902, 94,607.

From the foregoing figures it will be observed that the cases referred to inspectors for the four years ended June 30, 1901, averaged annually 158,347, and the total number of cases closed during the same period showed an annual average of 144,815. The total number of cases referred to inspectors during the fiscal year just closed aggregated 182,705, showing an increase of 24,358 as compared with the annual average of the preceding four years, and the total number of cases closed during the last fiscal year aggregated 175,425, showing an increase of 30,610 as compared with the annual average of cases closed during the preceding four years.

It also appears that the total number of C cases referred to inspectors during the last fiscal year was 1,430 less than the number of cases of this class referred during the previous year. This slight decrease in this class of cases is accounted for by the fact that a less number of cases relating to the inspection of post-offices was made up in 1902 than in 1901, there having been made up in 1901 19,302 inspection cases, while but 10,794 were made up in 1902.

These statistics show that, although the number of cases closed during the last fiscal year was 3,659 less than the number closed during the previous fiscal year, the total number referred to inspectors during 1902 exceeded the number referred during the preceding fiscal year by 4,191.

The aim of the office has been to increase the efficiency of this branch of the service by close scrutiny of reports received during the year, for the purpose of requiring uniform methods in the several divisions throughout the country and securing the highest standard of work possible from inspectors in the field. That this has had the effect of stimulating the members of the force to greater efforts is apparent from the more satisfactory character of the investigations made, as evidenced by the more complete, concise, and carefully prepared reports submitted.

The number of offices inspected during the year ended June 30, 1902, was 23,301, while the number of money-order offices in existence at the end of the fiscal year was 33,787. It will thus be seen that about 10,486 money-order offices were not inspected. The offices not visited are naturally the smaller ones, and those more difficult of access; and,

while the revenue from these offices would not be great, many of the postmasters have continued to employ wrong methods inherited from their predecessors, and in order that they might be given instructions which would insure the correction of irregularities, it is necessary that these offices be visited at least once a year by an inspector. The annual inspections, even without considering the protection to the revenues, have been highly beneficial, and the interests of the service require at least one inspection a year of every money-order office.

A CASES, OR CASES RELATING TO THE REGISTERED MAIL.

All complaints received referring to depredations upon or irregularities in the registered mail are included in Exhibits A, B, and C. Exhibit A shows the total number and character of complaints received and referred for investigation. Exhibit B is composed entirely of complaints which have been received, investigated, and closed during the last fiscal year, while the statistics in Exhibit C relate to cases received in previous years which were on hand and not completed at the beginning of the last year and which were investigated and closed during the year. It will be observed that the total number of complaints of this class which were received, jacketed, and assigned to inspectors for investigation during the last fiscal year aggregated 8,747, of which 8,182 related to letters or first-class matter, and 565 to packages, or third and fourth-class matter.

Of these cases 5,639 were investigated, reported upon, and closed, as shown by Exhibit B, from which it also appears that in 4,129 cases no actual loss had occurred, while in 1,339 the full amount of the alleged loss was recovered or collected, thus leaving only 171 to represent the actual number of cases in which loss was sustained.

Two thousand five hundred and ninety-four cases which were referred to inspectors in previous years were investigated and closed during the fiscal year just ended. (See Exhibit C.) Of these cases actual loss occurred in only 623, as the amount of the alleged loss was recovered or collected in 799, and it was discovered that no loss had been sustained in 1,172 cases.

A comprehensive idea of the result of work which has been accomplished in this class of cases during the past year can be obtained by a glance at the following table, which shows the average results of the preceding five years:

Year.	Complaints.	Cases investigated.	O. K.	Paid.	Loss.	Pieces handled.
1897	5,534	5,560	3,206	1,570	784	14,559,083
1898	6,445	6,320	3,618	1,834	868	15,600,220
1899	7,034	6,464	3,996	1,673	795	15,900,140
1900	7,165	6,432	3,831	1,848	753	18,386,332
1901	8,033	7,539	4,655	2,034	850	20,814,501
Total for five years	34,211	32,315	19,306	8,959	4,050	85,260,276
Annual average	6,842	6,463	3,861	1,792	810	17,052,055
1902	8,747	8,233	5,301	2,138	794	22,831,400

Cases outstanding July 1, 1896 1,221
Cases outstanding July 1, 1901 3,134

From this it will be seen that the total number of complaints received during the five years was 34,211, and the total number investigated during the five years was 32,315, or an annual average of 6,463 cases investigated and closed, showing an average loss of 810 out of an aver-

age of 17,052,055 pieces of registered mail handled yearly, or a net loss of one piece in every 21,052 handled, being 12.5 per cent of the complaints investigated.

A comparison of the office record for the last two fiscal years shows that the total number of complaints affecting the registered mail received during the fiscal year 1902 was 714 more than the total number of the same character received during 1901. The total number of pieces of registered mail handled during the fiscal year 1902 was 22,831,400.

Of 5,639 registered cases which were referred, investigated, and closed during the last fiscal year, it was found that in 4,129 cases no actual loss had occurred, and in 1,339 cases the full amount of the loss alleged was recovered or collected, thus leaving only 171 cases in which losses were actually sustained, or 3.03 per cent of the total number of cases referred, investigated, and closed during the last fiscal year. The same percentage applied to the total number of complaints received (8,747) would indicate a total of 265 cases in which actual losses had been sustained, or 1 in every 86,156 pieces handled. Sixty-three were official letters and packages, of practically no money value, so that the actual total loss of letters containing money value was in the proportion of 1 in every 113,026 pieces handled.

The 5,639 registered cases above referred to represent complaints from every State in the Union, together with Porto Rico (in which there were 21) and the Hawaiian Islands (in which there were 13). Actual loss occurred in no case in Porto Rico, and no actual loss was sustained in the Hawaiian cases. Missouri leads with 584 cases, in which there was actual loss in 3: New York follows with 366, and actual loss in 27; Mississippi had 333, with actual loss in 5; Texas with 296, and actual loss in 7; Pennsylvania with 293, and actual loss in 11; and Illinois with 288, and actual loss in 10.

The losses in 1899 were 8.7 per cent of the total number of cases referred and investigated, or an average of one piece in every 25,980 pieces handled. In 1900 the loss was 7.2 per cent of the total number of cases referred and investigated, or an average of one piece in every 35,682 handled. In 1901 the loss was 5.8 per cent of the total number of cases referred and investigated, or an average of one piece in every 44,666 pieces handled, while the loss for the fiscal year under consideration was 3.03 per cent of the total number of cases referred and investigated, or an average of one piece in every 86,156 handled.

Recapitulation of A cases.

Cases outstanding July 1, 1901	3,134
Cases under consideration in the Department July 1, 1901	674
Cases referred for investigation	8,747
Total	12,555
Cases closed (previous-year cases)	2,594
Cases closed (current-year cases)	5,639
Cases under consideration in the Department July 1, 1902	1,121
Cases outstanding July 1, 1902	3,201
Total	12,555

B CASES, OR CASES RELATING TO ORDINARY MAIL.

All unregistered letters and packages transmitted in the mails are included in the general classification of ordinary mail. Millions of

important communications and valuable inclosures are intrusted by the public to the mails yearly, with the confident expectation that they will reach destination in good order and safety; but in the most careful service errors are liable to occur, resulting in delay and occasional loss. It should not be inferred, however, that carelessness or even indifference is tolerated in handling the least valuable piece of ordinary mail. The post-office inspectors are as zealous in their endeavors to locate the criminal whose depredations are confined to ordinary mail as they are in cases involving registered mail, and even greater care is required to locate those who rifle ordinary mail only, because of the lack of facilities for tracing matter of this class.

As showing the importance of placing the name and address of the sender upon the envelope or wrapper, it is only necessary to state that thousands of letters deposited for transmission in the mails are misdirected or not directed at all; and it is often impossible, even with all the facilities afforded by the Department, either to deliver these letters to the addressees or return them to the writers. It is also important that every depredation upon the mails and losses occurring therein which may come to the knowledge of the patrons thereof should be promptly reported to the Chief Post-Office Inspector.

As shown in Exhibit D, there have been 103,257 complaints received at this office during the last fiscal year affecting the ordinary mail. Of this number, 53,700 referred to letters and 49,557 referred to packages. The above total shows an increase in number of 3,002, or a fraction under 3 per cent, as compared with the number of cases of this class received during the year 1901.

In addition to the 48,686 cases of this class which were referred and investigated during the fiscal year just completed, there were also 38,104 cases of the same class which had been received and referred in previous years, and which were closed last year, making a total of 86,790 B cases disposed of during 1902. Of the 48,686 cases referred and investigated during this year, it was shown that no loss had occurred in 12,205 cases, or nearly 25 per cent of the total complaints of this class received.

C CASES, OR MISCELLANEOUS COMPLAINTS AND INQUIRIES AFFECTING THE EMPLOYEES OR BUSINESS OF THE POSTAL SERVICE.

A reference to Exhibit E will show the number and character of this class of cases referred to inspectors for investigation during the fiscal year ended June 30, 1902, as well as the source from which the requests for such investigations emanated. It will be seen that the number of these references aggregated 41,527, of which 1,509 originated in the office of the First Assistant Postmaster-General, 356 in the office of the Second Assistant Postmaster-General, 768 in the office of the Third Assistant Postmaster-General, 38,368 in the office of the Fourth Assistant Postmaster-General (2,088 in the division of appointments, 14,632 in the division of bonds and commissions, and 21,648 in the division of post-office inspectors and mail depredations), 53 in the office of the Assistant Attorney-General for the Post-Office Department, and 473 in the office of the Auditor for the Post-Office Department.

At the beginning of the fiscal year there were 40,061 cases brought forward from the previous year not closed. Add to this the 41,527 received during the year and we have 81,588 cases to be accounted for. Of this total 52,056 were closed, leaving 29,532 cases on hand July 1, 1902.

The following is a statement in detail, showing the number of cases relating to violations of the various sections of the Postal Laws and Regulations of 1902:

Number of section.	Subject.	Number of cases.
329, 1578, 555	Irregularities on the part of postmasters in the sale of postage stamps, false returns of cancellations, etc.	335
484	Evasion of payment of proper rates of postage	419
499	Lottery matter in the mails	134
497, 498	Scurrilous and obscene matter	1,846
1617	Use of mails for fraudulent purposes	2,055
512	Unlawful use of penalty envelopes	52
266	Post-offices located in barrooms	19
1136 to 1141	Carrying mail by private express	28
1622, 1623	Obstructing the mails	53
1588	Forging or counterfeiting money orders	92
1604	Embezzlement of letters containing inclosures, by postal employes	49
1605	Detaining, opening, or destroying letters, by postal employees	449
1609, 1610	Intercepting or stealing mail, by any person	730
1576	Willfully neglecting to deposit postal revenues, by postmaster	46
1583, 1584, 1585	Removing cancellations from postage stamps	356

By reference to Exhibit F it will be seen that of the 41,527 cases referred to inspectors for investigation during the last fiscal year, 25,607 were reported on and finally closed, leaving a balance of 15,920 referred during that period which were not closed.

A comparison of the last two fiscal years shows that there were 1,430 less cases of this class referred to inspectors in 1902 than during 1901, while the number of cases closed in 1902 was 53 less than the number closed during the previous year, and 2,446 more than in 1900. It will thus appear that, although there were 53 less cases of this class investigated and closed during the last fiscal year, there was a decrease of 10,529 in the number of cases in the hands of inspectors June 30, 1902.

D CASES, OR CASES REFERRING TO HIGHWAY ROBBERY OF THE MAILS, ROBBERIES OF POST-OFFICES, AND OTHER SPECIAL DEPREDATIONS.

Exhibit H embraces the class of investigations which relates to the robbery and burning of post-offices, wreckings, and other casualties occurring to postal cars; highway robberies of mail trains, messengers, stages, etc. The investigation of this class of cases requires persistent and patient effort on the part of inspectors.

The following is a comparative statement of the depredations and casualties treated in this class of cases during the fiscal years 1899, 1900, 1901, and 1902:

Year.	Robberies.				Postal cars burned and wrecked.	Post-offices burned.	Pouches lost.	Pouches cut or stolen.
	Post-offices.	Mail trains and stages.	Mail messengers, star route carriers, and wagons.	Letter boxes, street and rural free delivery.				
1899	1,481	34	.....	76	46	563	488	401
1900	1,587	22	.....	76	92	586	602	511
1901	1,635	37	3	158	71	643	656	743
1902	1,746	11	16	465	74	669	762	742

The above figures show a decrease in the number of postal cars and stages robbed as compared with previous years noted, but an increase in the number of other depredations and casualties listed. This is accounted for by the expansion of the postal service in its various branches. In this table the number of letter boxes robbed is given as 465 as against 158 for the year 1901 and 76 for 1900. This increase is due to the growth of the rural free-delivery service. It is obvious that boxes placed along the country highways are much more liable to depredations than those along city streets.

At the beginning of the last fiscal year there were 1,159 cases brought forward from the previous year not closed. Add to this 4,947 cases received during the year, and we have 6,106 cases to be accounted for. Of this total, 3,633 were referred and closed during the year, and 980 referred during previous years were also closed, making a total of cases closed during the last fiscal year of 4,613, leaving a balance of 1,493 cases on hand July 1, 1902. Of this balance, 179 were of previous years' reference.

The special feature which attracts attention in this class of cases is the fact that the number of post-offices robbed during the fiscal year was 1,746, which, in comparison with the average number for the previous three years (1,567), shows an increase of over 11 per cent, with a corresponding decrease of 1,021 in the total number of post-offices.

The decrease in the number of post-offices is accounted for by the consolidation of small offices and the extension of the rural free-delivery service.

CLASS F CASES.

Inquiries and complaints relating to international mail matter forwarded to and from foreign countries and in transit across the United States to a foreign country are designated F cases. For the most part these cases are simply inquiries relative to the delivery of foreign matter, which necessarily require considerable correspondence. But few need personal investigation by an inspector. During the year there were 24,118 of this class, of which 14,814 related to registered matter, 9,087 to the ordinary mail, and 217 were of a miscellaneous nature. To the 24,118 cases received there should be added 4,191 cases which were on hand at the beginning of the fiscal year, making a total of 28,309 cases on hand and received during the year. Of this number 23,515 cases were closed.

A total of 14,402 registered cases was closed, and in 14,008 of these investigation demonstrated that no loss had occurred in the registered mails. Twenty-seven cases related to investigations in which collections were made and the amount so collected disbursed through this office. Twenty-two cases affecting registered matter were closed as chargeable to robberies. One hundred and forty-one cases related to losses outside of the United States, and 202 cases related to alleged rifling not located. Of the 8,902 cases relating to ordinary matter, which were closed during the year, 3,529 were reported without loss; in 5,373 cases the losses could not be located; 45 cases related to international money orders, and 139 cases were of a miscellaneous character. At the end of the year there were 4,794 cases on hand partially investigated, 310 being in the hands of inspectors.

The number of inquiries and replies received during the year which required translation into English amounted to 11,719. Of this number, 4,267 were translated by the foreign mails division of the Second

Assistant Postmaster-General's Office and 7,452 were translated by our own force.

The following summary of foreign cases shows the number and character of reports received, the number of cases disposed of during the fiscal year, those remaining on hand from the previous year, and the cases which are now in an incomplete condition:

Summary of F cases.

[Showing the number on hand, received, and disposed of during the fiscal year, and the number not completed at the beginning of the current year, July 1, 1902.]

Cases on hand July 1, 1901	4,191
Cases received during the year relating to registered matter	14,814
Cases received relating to ordinary matter	9,087
Cases received of a miscellaneous character	217
Total	28,309
Cases relating to registered matter closed without loss	14,008
Registered cases in which loss occurred abroad	141
Registered cases closed, showing loss by robbery in the United States	22
Registered cases closed in which loss was not located as between the United States and foreign countries	14
Registered cases closed, showing loss in United States	15
Registered cases closed in which the alleged rifling was not located as between the United States and foreign countries	202
Total registered cases closed	14,402
Ordinary cases closed without loss	3,529
Ordinary cases closed, loss not located	5,373
Total ordinary cases closed	8,902
Cases relating to international money orders closed	45
Other miscellaneous cases closed	139
Total miscellaneous cases closed	184
Cases closed in which collections were made and sums disbursed through this office	27
Total number of cases closed during the year	23,515
Cases on hand, unfinished, July 1, 1902	4,794
Total	28,309

ARRESTS FOR OFFENSES AGAINST THE POSTAL LAWS.

The total number of arrests during the fiscal year, as shown by Exhibit I, was 1,721. Of this number 112 were postmasters, 25 were assistant postmasters, 64 were clerks in post-offices, 13 were railway postal clerks, 29 were letter carriers, 43 were mail carriers, and 18 were employed in minor positions in the postal service. The remainder (1,417) were persons not connected in any way with the postal service, and among them were 287 post-office burglars.

Of the total number of arrests (1,721), 1,191 were disposed of in United States courts, resulting in 719 convictions. One hundred and forty-seven defendants were discharged by the grand jury; 115 were discharged on preliminary examination; 78 were acquitted. In 63 cases sentence was suspended; in 62 cases proceedings were dismissed, and 7 defendants died awaiting trial. Eleven forfeited bail and 10 escaped from custody, leaving 569 cases pending in United States courts on July 1, 1902.

In State courts 113 cases were disposed of, resulting in 42 convictions and 10 acquittals, leaving 61 cases awaiting trial at the close of the fiscal year.

The following is a comparative statement of the depredations and casualties of this class for the past decade:

Year.	Number of post-offices.	Increase.	Post-offices burned.	Increase.	Post-offices burglarized.	Increase.	Burglars arrested.	Increase.
		Per cent.		*Per cent.*		*Per cent.*		*Per cent.*
1892	67,119	4.3	498	12.2	1,108	27.6	203	14
1893	68,403	1.9	530	6.4	1,195	7.9	228	12.3
1894	68,805	.6	558	5.3	1,621	35.6	351	53.9
1895	70,064	1.8	532	a4.7	1,561	a3.7	423	20.5
1896	70,360	.4	532	.....	1,474	a5.6	470	11.1
1897	71,022	.9	500	a6	1,573	6.7	419	a10.9
1898	73,570	3.5	544	8.8	1,547	a1.7	441	5.3
1899	75,000	1.9	563	3.4	1,481	a4.2	361	a18
1900	76,688	2.2	586	4	1,587	7.2	320	a11.3
1901	76,945	.3	643	9.7	1,635	3	327	2.1
1902	75,924	a.1	669	9.5	1,746	9.3	287	a8.7
1892	67,119	.....	498	.....	1,108	.....	203	.....
1902	75,924	13.1	669	34.3	1,746	57.5	287	41.3

a Decrease.

From this table it will be noted that while the number of post-offices in the United States has increased only 13.1 per cent during the last ten years, the increase in the number of post-offices destroyed by fire during that period has been 34.3 per cent, and the number of post-office robberies has increased 57.5 per cent, while the increase in the number of post-office burglars arrested has been 41.3 per cent.

IDENTIFICATION OF CRIMINALS.

The matter of the identification of criminals is one of importance. The section having charge of this feature of the work has been in operation since July 1, 1899, and is of great value to the service. The Bertillon system of measurement and description is used whenever practicable, and there are now on file in the section the descriptions and histories of many criminals. The identification section, through the Chief Post-Office Inspector, is a subscriber to the National Bureau of Identification. To this national bureau are sent photographs, measurements, and descriptions of criminals when arrested, and the information of that institution is at the command of the post-office inspectors.

REWARDS.

The standing rewards offered by the Postmaster-General for the apprehension and conviction of post-office robbers have secured the earnest cooperation of local officers and the detective and police forces of the country, resulting in the arrest of a considerable number of particularly bold and annoying depredators of this class.

During the year there have been filed with the Department 109 claims for rewards, and there were on hand, at the close of the fiscal year 1901, 73 claims of this character, making a total of 182 claims under consideration during the year just closed. Of this number, 15 claims were rejected, 66 were on hand at the close of the year, and 101 were paid, as follows: One claim of $200, chargeable to the appropriation of 1897; 1 claim of $50, chargeable to the appropriation of 1898; 21

claims, making a total of $5,100, chargeable to the appropriation of 1900; 72 claims, making a total of $11,500, chargeable to the appropriation of 1901; 6 claims, making a total of $1,200, chargeable to the appropriation of 1902; the entire number of claims paid during the year making a total of $18,050.

From the above statistics it will appear that there was an unexpended balance of $23,800 on hand July 1, 1902, on account of the appropriation for rewards. There were, however, under consideration at that time 45 claims which, if allowed, will be payable from the appropriation for 1902. This number will be considerably augmented by claims to be filed for recent arrests which relate to offenses committed during the last fiscal year. When these rewards have been adjusted and settled, their payment will consume a large proportion of the unexpended balance.

Attention is called to the fact that during the last fiscal year 72 claims, amounting to $11,500, were paid from the appropriation of 1901 (including one claim for $800, two claims for $600 each, and six claims for $400 each), and 21 claims, amounting to $5,100 (including one claim for $2,000 and one claim for $1,000), were paid from the appropriation of 1900.

The beneficial effects resulting from the money expended on account of these rewards is apparent, and I respectfully recommend that the appropriation of $25,000 for this purpose be renewed.

Financial statement.

Division.	Cash on hand July 1, 1901.	Cash collected.	Total cash.	Cash disbursed.	Balance on hand July 1, 1902.
Boston	$15.00	$20,942.65	$20,957.65	$20,957.65	
Chattanooga	92.40	34,145.52	34,237.92	34,203.56	$34.36
Chicago		44,800.96	44,800.96	44,794.59	6.37
Cincinnati		17,029.45	17,029.45	17,027.86	1.59
Denver		15,661.27	15,661.27	15,661.27	
Honolulu		909.77	909.77	909.77	
Kansas City		13,178.90	13,178.90	13,178.90	
New Orleans		34,820.10	34,820.10	34,806.90	13.20
New York		27,332.11	27,332.11	27,327.11	5.00
Philadelphia	27.36	30,025.90	30,053.26	30,041.10	12.16
St. Louis	3.70	21,458.58	21,462.28	21,461.18	1.10
St. Paul	4.25	19,853.82	19,858.07	19,853.07	5.00
San Francisco		15,077.28	15,077.28	15,040.28	37.00
San Juan		272.05	272.05	272.05	
Spokane		28,723.03	28,723.03	28,719.03	4.00
Washington		27,747.38	27,747.38	27,747.38	
Total	142.71	351,978.77	352,121.48	352,001.70	119.78

The above table shows, by divisions, the amounts of money collected or recovered and disbursed during the fiscal year.

Adding to $142.71, the amount of cash on hand at the close of the fiscal year 1901, the sum collected during the past year—$351,978.77—the total to be accounted for is $352,121.48. Of this amount $352,001.70 has been disbursed, leaving an unexpended balance of $119.78 at the close of the year. This money represents collections of balances due from postmasters, penalties for violations, amounts recovered on account of fraudulent use of the mails, and collections of amounts illegally received by postmasters through false cancellations, as well as collections in cases of robberies of post-offices, wrecking of mail trains, highway robberies of mail stages, and moneys received on account of loss in the ordinary and registered mails attributable to carelessness, accident, or larceny.

CUBA.

On May 20 Inspector Fosnes delivered to his Cuban successor the postal service, completely organized in its operations and accounts, completely equipped with material, and almost entirely Cubanized in its personnel. The transfer was effected without a ripple of disturbance. Among the assets turned over to the new administration were postage stamps and stamped paper to the amount of $177,600.07, sufficient for six months' requirement, and money-order funds to the amount of $183,249.78.

The administration of the postal affairs of Cuba by Inspector Fosnes is a source of pride to this Bureau. It was economical and efficient. The improvements in the service during this period can not be more forcibly illustrated than by comparing the first eighteen months of his administration with the eighteen months of the administration dating from the beginning of American occupation to the reorganization of the service by the officers of this Bureau.

The figures for the two 18-month periods are as follows:

Revenues:	
January 1, 1899, to June 30, 1900	$387,439.66
July 1, 1900, to December 31, 1901	549,413.19
Increase	161,973.53
Or 41.8 per cent.	
Expenditures:	
January 1, 1899, to June 30, 1900	910,486.59
July 1, 1900, to December 31, 1901	654,987.81
Decrease	255,498.78
Or 28.06 per cent.	
Deficit:	
January 1, 1899, to June 30, 1900	523,046.93
July 1, 1900, to December 31, 1901	105,574.62
Net gain in favor of reorganized service	417,472.31

The same course of economy was followed down to the turning over of the postal affairs of the island to the Cuban Government on May 20 of this year. The total revenues for the period July 1, 1901, to May 19, 1902, were $335,915.51, and the expenditures were $372,573.56. Expressed in pro rata equivalents, these figures compare with those of 1901 as follows:

Revenues:	
1901	$367,634.50
1902	379,596.35
Increase	11,961.85
Expenditures:	
1901	451,437.89
1902	421,020.20
Decrease	30,417.69
Deficit:	
1901	83,803.39
1902	41,423.85
Decrease	42,379.54
Or 50.57 per cent.	

At such rate of decrease the deficit would have disappeared and the service become self-sustaining in another year. The service was at the same time continually improving. This is a record of administration which may well serve as a model to our Cuban friends.

HAWAII.

The division of post-office inspectors established at Honolulu for the Territory of Hawaii, as mentioned in my last annual report, has been discontinued. It is now included in the San Francisco division.

RECOMMENDATIONS.

The act of June 13, 1898, providing that assistant postmasters, cashiers, and other employees in post-offices of the first, second, and third classes shall give bond direct to the United States, has not proven satisfactory in operation and has raised a number of legal questions, which, if decided in accordance with the contention of sureties and postmasters, may result in serious loss to the Government. Originally a postmaster was responsible under his bond for all moneys received, and it was his duty to account therefor, even if a loss was due to a subordinate. A vexatious question as to responsibility for losses has arisen since the act referred to became effective. If the postmaster makes good the loss, there is no provision for him to succeed to the rights of the United States under the clerk's bond. If it should be judicially determined that the bonding of the clerk direct to the United States relieves the postmaster, the Government would have no recourse in the event the loss exceeded the amount of the bond. I therefore earnestly renew my recommendation that the act be repealed, and suggest a law be enacted requiring assistant postmasters, cashiers, and other employees to give bonds to postmasters direct and holding postmasters responsible under their own bonds for any and all acts and defaults occurring at their respective offices.

I further recommend:

That an appropriation be made for the purpose of constructing lookouts wherever, in the opinion of the Postmaster-General, the same may be needed.

That the interstate-commerce law be amended to prohibit common carriers to wit, telegraph and express companies or any of their employees from aiding and abetting in the green-goods or lottery swindles or any other scheme, carried on partly by mail and partly by common carrier, and which is in violation of the postal laws.

Respectfully submitted.

J. L. BRISTOW,
Fourth Assistant Postmaster-General.

The POSTMASTER-GENERAL.

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REPORT

OF THE

SECRETARY OF THE NAVY.

NAVY DEPARTMENT,
Washington, November 19, 1902.

The PRESIDENT:

SIR: During a large part of the fiscal year the administration of this Department was conducted by Hon. John D. Long, whom I succeeded on May 1, 1902.

A statement of the operations of the fleet reveals an activity characteristic of all branches of the naval service of to-day. Such a statement may be found in the report of the Chief of the Bureau of Navigation, and will not be repeated in this report. The cooperation of the Army and Navy has everywhere been cordial. The Navy has done its share in restoring order in the Philippines. The conditions throughout the islands have so far improved that the constant presence of a large naval force is no longer necessary. Five gunboats have been put out of commission or laid up for repairs.

The disturbed conditions in the West Indies and Caribbean have required the constant presence of our ships charged with the duties of maintaining order by moral influence, protecting the interests of our citizens and those of other nations committed to us, and of preserving the treaty rights of the Government. These duties have been performed in harmonious cooperation with the Department of State.

The Navy rendered essential aid in the relief furnished to the inhabitants of the islands of Martinique and St. Vincent afflicted by the volcanic eruption occurring in May last.

Ocean surveys have been continued to the extent which the number of available officers, men, and ships would permit.

The Navy participated in many ceremonial occasions, one of which is so significant and memorable that it merits a special description. In May, 1902, the U. S. S. *Brooklyn* was ordered to proceed to Habana, Cuba, to be in attendance at the ceremonies of the transfer of the authority of the United States in that island to the Cuban Government. On the day of the transfer, May 20, 1902, the *Brooklyn* dressed ship,

and at noon, when the American ensign was lowered on the Morro, a national salute was fired, marine guard paraded, the ship's company manned the rail, and the band played the national air, a Cuban flag being immediately hoisted and saluted in a similar manner. The foreign ships in the port of Havana followed the movements of the *Brooklyn*. Shortly after the transfer of the Government was effected, Brig. Gen. Leonard Wood, U. S. Army, who had been governor-general of the island, came on board the *Brooklyn*, and was received with full honors due the position of governor-general. A salute of 17 guns was fired by the *Brooklyn*, as well as by the British cruiser *Psyche* and the Italian cruiser *Calabria*. These last salutes were returned by the *Brooklyn*. At 3.30 in the afternoon the *Brooklyn* proceeded to sea, to convey General Wood and his staff to a United States port.

The task which is employing the highest energies of the Navy, and receiving the greatest attention from the heads of bureaus, the commanders in chief of stations, the commanding and subordinate officers of squadrons, divisions, and single vessels everywhere, is the work of training. To the development of the greatest efficiency in all branches of the service the attention, zeal, and thought of those in charge is mainly directed. This is an era of training. The reports of the several bureaus are largely made up of criticisms upon and plans for the improvement of present systems of practice, drill, and instructions.

The training of apprentice boys and landsmen entering for the first time the enlisted force of the Navy in all that is comprehended by the term "the sea habit;" the training of seamen who have acquired this, but need greater familiarity with the specialized work of a modern ship of war; the training of officers and men of the Marine Corps in the military and naval duties of that organization; the training of officers and men, sailors and marines in the essential matter of marksmanship with all arms, great and small, including machine and rapid-fire guns, in the care and handling of ordnance, and, particularly, in "gun pointing;" training in developing and maintaining the efficiency of the main engines of ships, as well as of all auxiliary machinery and devices, steam, electrical, and other; the training of young officers of the staff corps in the specialties of their profession, as well as in its general obligations and duties; the training of junior officers in torpedo work of all kinds, and in the handling of the smaller vessels, and the training of more experienced officers in the capacity to bring out and utilize the full powers of the vessels under their command, whether operating singly or in squadrons, appears to be the important present business of the Navy.

For these purposes schools of instruction have been established wherever practicable, among them being the school for petty officers of the seaman branch at Newport, and for the artificer branch at the navy-yards, Portsmouth, Va., and New York; the school at the

Medical Museum, and the torpedo school at Newport. At the same time the work of the Naval War College has received increased attention.

It is needless to say that the purpose of all this instruction and training is to make the Navy fit for its ultimate design as an instrument of warfare. The Navy serves many useful purposes in times of peace which should by no means be minimized. Nevertheless it would not exist in anything like its present form if the possibility of war were not in contemplation. It is believed to be the duty of the Department to employ the means which Congress has placed at its disposal to develop every latent power of materiel and personnel and see that all branches of the service operate in intelligent harmony. This constitutes that preparedness for war which is the best guaranty of the continuance of peace. It has been remembered at every step that the people desire peace and not war, and that the Navy should be potent that peace may be preserved. This preparedness for war should be complete; a partial or half-way preparation will not insure us against attack, may even invite it.

VESSELS UNDER CONSTRUCTION.

At the close of the last fiscal year there were under construction for the Navy, by contract, the following vessels: Eight battle ships, 6 armored cruisers, 9 protected cruisers, 4 monitors, 13 torpedo-boat destroyers, 7 torpedo boats, and 7 submarine torpedo boats. The general progress of work upon these vessels, particularly those of the larger class, has not been found to be satisfactory. The battle ships were, on the 30th of June, 1902, from 10 to 29 months behind contract time; the armored cruisers from 4 to 13 months; the protected cruisers from 6 to 18 months, while the monitors were from 16 to 19 months in arrears.

In the cases of the larger vessels the causes assigned for slow progress are the nondelivery of structural material, the inability of shipbuilders to obtain a sufficient supply of skilled labor, and in some cases, strikes. Other causes have contributed to the result. The Department has recently taken steps to remove, as far as practicable, any grounds of delay over which it can exercise control, and has notified contractors that they will be held to accountability for failure to push forward the work of construction with due diligence, if such failure shall occur, and particularly for any delays which may at any time be caused by preference being given to private over public work.

In the case of torpedo boats and the destroyers, the contractors have assigned as an additional reason for delay that the contracts for their construction were so exacting that compliance with them has been well nigh impossible.

During the fiscal year the following vessels have been finally accepted: The battleships *Alabama*, *Wisconsin*, and *Illinois;* the torpedo boats *Bailey*, *Bagley*, *Barney*, *Biddle*, *Shubrick*, and *Stockton*. The torpedo boats *Thornton* and *Wilkes*, and the destroyers *Decatur*, *Perry*, and *Preble* have been preliminarily accepted. Between July 1, 1902, and November 1, 1902, the *Thornton* has been finally, and the following vessels preliminarily, accepted: The monitor *Arkansas*, the torpedo-boat destroyers *Barry*, *Chauncey*, *Dale*, *Paul Jones*, *Truxton*, *Whipple*, and *Worden*, and the torpedo boat *De Long*.

The monitors *Catskill*, *Manhattan*, and *Mahopac* and the receiving ship *Vermont* have been stricken from the Navy Register during the fiscal year. These vessels, condemned as unfit for further service under the provisions of the law, were advertised and sold as follows: The *Catskill*, single-turreted monitor, appraised value, $6,160, was sold December 4, 1901, to L. E. Lunt, Melrose, Mass., for $11,788; the *Manhattan*, single-turreted monitor, appraised value, $8,736, was sold March 5, 1902, to Henry A. Hitner's Sons, Philadelphia, Pa., for $15,218; the *Mahopac*, single-turreted monitor, appraised at $8,516, was sold March 5, 1902, to A. V. Kaiser & Co., Philadelphia, Pa., for $15,218. The U. S. S. *Vermont* was twice advertised for sale. Under the first advertisement no bids were received above the appraised value of the vessel ($18,000). A reappraisement was made at $14,000, and, under a second advertisement, the *Vermont* was sold on April 15, 1902, to L. E. Lunt, of Melrose, Mass., for $15,658.

There follows a list of the vessels on the Navy Register at the close of the fiscal year.

List of ships of the United States Navy.

[ABBREVIATIONS.—*Hull:* S., steel; S. W., steel, wood sheathed; I, iron; W., wood. *Propulsion:* S., screw; T. S., twin screw; Tr. S., triple screw; P., paddle.]

FIRST RATE.

Name.	Displacement (tons).	Type.	Hull.	I. H. P.	Propulsion.	Guns (main battery).	Station or condition.
Alabama	11,525	First-class battle ship.	S.	11,366	T. S.	18	North Atlantic Station.
Illinois	11,525	.....do	S.	11,366	T. S.	18	European Station.
Wisconsin	11,525	.....do	S.	10,000	T. S.	18	Pacific Station.
Kearsarge	11,525	.....do	S.	11,954	T. S.	22	North Atlantic Station.
Kentucky	11,525	.....do	S.	12,318	T. S.	22	Asiatic Station.
Iowa	11,340	.....do	S.	12,105	T. S.	18	South Atlantic Station.
Indiana	10,288	.....do	S.	9,738	T. S.	16	Cadet practice ship (Naval Academy).
Massachusetts	10,288	.....do	S.	10,403	T. S.	16	North Atlantic Station.
Oregon	10,288	.....do	S.	11,111	T. S.	16	Repairing, navy-yard, Puget Sound.
Brooklyn	9,215	Armored cruiser	S.	18,769	T. S.	20	North Atlantic Station.
New York	8,200	.....do	S.	17,401	T. S.	18	Asiatic Station.

List of ships of the United States Navy—Continued.

SECOND RATE.

Name.	Displacement (tons).	Type.	Hull.	I. H. P.	Propulsion.	Guns (main battery).	Station or condition.
Columbia	7,375	Protected cruiser	S.	18,509	Tr. S.	11	Receivingship, navy-yard, New York, N. Y.
Minneapolis	7,375	do	S.	20,862	Tr. S.	11	Receivingship, navy-yard, League Island, Pa.
Texas	6,315	Second-class battle ship.	S.	8,610	T. S.	8	Navy-yard, Norfolk.
Puritan	6,060	Double-turret monitor.	I.	3,700	T. S.	10	Special service (gunnery training ship).
Olympia	5,870	Protected cruiser	S.	17,313	T. S.	14	North Atlantic Station.
Chicago	5,000	do	S.	9,000	T. S.	18	European Station.
Yankee	6,888	Cruiser (converted).	I.	3,800	S.	10	Navy-yard, League Island.
Prairie	6,872	do	I.	3,800	S.	10	Training service (landsmen).
Buffalo	6,888	do	S.	3,600	S.	6	En route to Manila.
Dixie	6,145	do	S.	3,800	S.	10	Navy-yard, New York.
Baltimore	4,413	Protected cruiser	S.	10,064	T. S.	10	Do.
Philadelphia	4,324	do	S.	8,815	T. S.	12	Pacific Station.
Newark	4,098	do	S.	8,869	T. S.	12	Navy-yard, Boston.
San Francisco	4,098	do	S.	9,913	T. S.	12	European Station.
Monterey	4,084	Barbette turret, low free-board monitor.	S.	5,244	T. S.	4	Asiatic Station.

THIRD RATE.

Ajax	a 7,500	Collier	S.	3,000	S.	b 2	Collier service.
Glacier	a 7,000	Refrigerator ship	S.	.....	S.	b 3	Asiatic Station.
Celtic	6,428	Supply ship	S.	1,890	S.	.....	Do.
Culgoa	a 6,300	do	S.	a 1,500	.....	.....	Navy-yard, Boston.
Saturn	a 6,220	Collier	I.	1,500	S.	b 2	Asiatic Station.
Rainbow	6,206	Cruiser (converted).	S.	1,800	S.	.....	Do.
Arethusa	a 6,200	Tank steamer	S.	.....	S.	.....	Do.
Alexander	6,181	Collier	S.	1,026	S.	b 2	Collier service.
Iris	6,100	Supply and repair ship.	S.	1,300	S.	.....	Asiatic Station.
Brutus	a 6,000	Collier	S.	1,200	S.	b 2	Collier service.
Sterling	5,663	do	I.	a 926	S.	b 2	Do.
Cæsar	5,616	do	S.	1,500	S.	b 4	Do.
Nero	4,925	do	S.	1,000	S.	b 4	Do.
Nanshan	a 4,827	do	S.	.....	.....	.....	Asiatic Station.
Abarenda	4,670	do	S.	1,050	S.	b 4	En route to navy-yard, Norfolk.
Supply	4,460	Supply ship	I.	1,069	S.	b 2	Navy-yard, New York.
Marcellus	a 4,400	Repair ship	I.	1,200	S.	b 2	Navy-yard, Norfolk, Va.
Hannibal	4,291	Collier	S.	1,100	S.	b 2	Collier service.
Leonidas	4,242	do	S.	1,000	S.	b 2	Do.
Solace	4,700	Hospital ship	S.	3,200	S.	.....	Transport service to Manila.
Panther	4,260	Cruiser (converted).	I.	.....	S.	8	Navy-yard, New York, N. Y.
Miantonomoh	3,990	Double-turret monitor.	I.	1,426	T. S.	4	Navy-yard, League Island, Pa.
Amphitrite	3,990	do	I.	1,600	T. S.	6	Navy-yard, Boston.
Monadnock	3,990	Double-turret monitor.	I.	3,000	T. S.	6	Asiatic Station.
Terror	3,990	do	I.	1,600	T. S.	4	Naval Academy, Annapolis, Md.
Albany	3,437	Protected cruiser	S. W.	7,500	T. S.	10	European Station.
New Orleans	3,437	do	S. W.	7,500	T. S.	10	Asiatic Station.
Lancaster	3,250	Cruiser	W.	1,000	S.	12	Training service (landsmen).
Cincinnati	3,213	Protected cruiser	S.	10,000	T. S.	11	Training ship (firemen).
Raleigh	3,213	do	S.	10,000	T. S.	11	Navy-yard, Portsmouth, N. H.
Reina Mercedes	3,090	do	S.	3,700	S.	.....	Do.
Atlanta	3,000	do	S.	4,030	S.	8	South Atlantic Station.
Boston	3,000	do	S.	4,030	S.	8	Navy-yard, Mare Island.
Hartford	2,790	Cruiser	W.	2,000	S.	13	Training ship (apprentices).

a Estimated.

b Secondary battery.

List of ships of the United States Navy—Continued.

THIRD RATE—Continued.

Name.	Displacement (tons).	Type.	Hull.	I. H. P.	Propulsion.	Guns (main battery).	Station or condition.
Mayflower	2,690	Cruiser (converted).	S.	4,700	T. S.	2	Special service.
Topeka	2,372	Gunboat	I.	2,000	S.	8	Training ship (landsmen).
Katahdin	2,155	Harbor-defense ram.	S.	5,068	T. S.	4	Navy-yard, League Island.
Canonicus	2,100	Single-turret monitor.	I.	340	S.	2	Do.
Detroit	2,089	Unprotected cruiser.	S.	5,227	T. S.	10	Navy-yard, Portsmouth, N. H.
Montgomery	2,089	do	S.	5,580	T. S.	10	Navy-yard, New York.
Marblehead	2,089	do	S.	5,451	T. S.	10	Navy-yard, Mare Island.
Mohican	1,900	Cruiser	W.	1,100	S.	6	Training ship (landsmen).
Jason	1,875	Single-turret monitor.	I.	340	S.	2	Navy-yard, League Island.
Lehigh	1,875	do	I.	340	S.	2	Do.
Montauk	1,875	do	I.	340	S.	2	Do.
Nahant	1,875	do	S.	340	S.	2	Do.
Manila	1,800	Gunboat	I.	750	S.	2	Navy-yard, Mare Island.
Bennington	1,710	do	I.	3,436	T. S.	6	Do.
Concord	1,710	do	S.	3,405	T. S.	6	Do.
Yorktown	1,710	do	S.	3,392	T. S.	6	Asiatic Station.
Dolphin	1,486	Dispatch boat	S.	2,253	S.	3	Special service.
Wilmington	1,392	Light-draft gunboat.	S.	1,894	T. S.	8	Asiatic Station.
Helena	1,392	do	S.	1,988	T. S.	8	Do.
Adams	1,375	Cruiser	W.	800	S.	6	Navy-yard, Mare Island.
Essex	1,375	do	W.	800	S.	6	Training ship (apprentices).
Enterprise	1,375	do	W.	800	S.	1	Public Marine School, Boston.
Nashville	1,371	Light-draft gunboat.	S.	2,536	T. S.	8	European Station.
Monocacy	1,370	do	I.	850	P.	6	Asiatic Station.
Castine	1,177	Gunboat	S.	2,199	T. S.	8	Navy-yard, League Island.
Machias	1,177	do	S.	2,046	T. S.	8	North Atlantic Station.
Chesapeake	1,175	do	Comp.		Sails.	6	Cadet practice ship (Naval Academy).
Don Juan de Austria.	1,159	do	I.	1,500	S.	4	Asiatic Station.
Isla de Luzon	1,030	do	S.	2,627	T. S.	6	Do.
Isla de Cuba	1,030	do	S	2,627	T. S.	6	Do.
Alert	1,020	Cruiser	I.	500	S.	3	Training ship (apprentices).
Ranger	1,020	do	I.	500	S.	6	Special service.
Annapolis	1,000	Composite gunboat.	Comp.	1,227	S.	6	Asiatic Station.
Vicksburg	1,000	do	Comp.	1,118	S.	6	Do.
Wheeling	1,000	do	Comp.	1,081	T. S.	6	Station ship, Tutuila.
Marietta	1,000	do	Comp.	1,054	T. S.	6	North Atlantic Station.
Newport	1,000	do	Comp.	1,008	S.	6	Training Station, Newport, R. I.
Princeton	1,000	do	Comp.	800	S.	6	Asiatic Station.

FOURTH RATE.

Lebanon	3,375	Collier	I.		S.	b4	Collier service.
Justin	3,300	do	S.		S.	b2	Asiatic Station.
Southery	a3,100	do	I.		S.	b2	Prison ship, navy-yard, Boston.
Pompey	a3,085	do	S.		S.	b2	Asiatic Station.
Zafiro	a2,000	Supply ship	S.				Do.
General Alava	1,400	Transport	S.	770	S.	b4	Do.
Yankton	975	Gunboat (converted).	S.	750	S.	b8	Navy-yard, Portsmouth, N. H.
Vesuvius	929	Dynamite-gun vessel.	S.	3,795	T. S.	b3	Navy-yard, Boston.
Petrel	892	Gunboat	S.	1,095	S.	4	Navy-yard, Mare Island.
Scorpion	850	Gunboat (converted).	S.	2,800	T. S.	b8	North Atlantic Station.
Fern	840	Tender	W.	300	S.	b3	Naval Militia, District of Columbia.

a Estimated.

b Secondary battery.

List of ships of the United States Navy—Continued.

FOURTH RATE—Continued.

Name.	Displacement (tons).	Type.	Hull.	I. H. P.	Propulsion.	Guns (main battery).	Station or condition.
Bancroft	839	Gunboat	S.	1,213	T. S.	4	Navy-yard, Boston.
Vixen	806	Gunboat (converted).	S.	1,250	S.	a 4	Navy-yard, Portsmouth, N. H.
Gloucester	786	do	S.	2,000	S.	a 10	Naval Academy, Annapolis, Md.
Michigan	685	Cruiser	I.	365	P.	a 6	Special service, Northwestern Lakes.
Wasp	630	Gunboat (converted).	S.	1,800	S.	b 6	Navy-yard, Port Royal, S. C.
Frolic	607	do	S.	550	S.	b 4	Asiatic Station.
Dorothea	594	Gunboat (converted).	S.	1,558	S.	b 10	Naval Militia, Illinois.
El Cano	560	Gunboat	S.	600	T. S.	.....	Asiatic Station.
Pinta	550	do	I.	310	S.	b 2	Naval Militia, San Diego Cal.
Stranger	a 546	Gunboat (converted).	I.	.....	S.	b 5	Naval Militia, Louisiana.
Peoria	488	do	S.	.....	S.	b 7	Tender to Puritan.
Hist	472	do	S.	500	S.	b 6	Training Station, Newport, R. I.
Eagle	434	do	S.	850	S.	b 6	Navy-yard, Portsmouth.
Hornet	425	do	S.	800	S.	b 9	Naval militia, North Carolina.
Quiros	400	Gunboat	Comp.	208	S.	b 2	Asiatic Station.
Villalobos	400	do	Comp.	208	S.	b 2	Do.
Hawk	375	Gunboat (converted).	S.	1,000	S. S.	b 4	Naval Militia, Ohio.
Siren	a 315	do	S.	.....	.....	b 4	Tender to Franklin.
Sylvia	a 302	do	I.	.....	S.	b 6	Naval Militia, Maryland.
Callao	200	Gunboat	S.	250	T. S.	b 6	Asiatic Station.
Pampanga	200	do	I.	250	T. S.	b 4	Do.
Paragua	200	do	I.	250	T. S.	b 4	Do.
Samar	200	do	I.	250	T. S.	b 4	Do.
Arayat	200	do	I.	250	T. S.	b 6	Do.
Aileen	192	Gunboat (converted).	S.	500	S.	b 5	Naval Militia, New York.
Mindanao	174	Gunboat	I.	100	T. S.	b 6	Asiatic Station.
Elfrida	a 173	Gunboat (converted).	S.	200	S.	b 2	Naval Militia, New Jersey.
Sylph	152	do	S.	550	S.	b 8	Special service.
Columbines	150	Gunboat	I.	125	T. S.	b 3	Asiatic Station.
Albay	150	do	I.	125	T. S.	b 3	Do.
Leyte	150	do	I.	125	T. S.	b 3	Do.
Oneida	150	Gunboat (converted).	W.	350	S.	b 6	Naval Militia, District of Columbia.
Panay	142	Gunboat	I.	125	T. S.	b 4	Asiatic Station.
Manileño	142	do	I.	125	T. S.	b 4	Do.
Mariveles	142	do	I.	125	T. S.	b 4	Do.
Mindoro	142	do	I.	125	T. S.	b 4	Do.
Restless	137	Gunboat (converted).	I.	500	S.	b 8	Navy-yard, Norfolk.
Shearwater	122	do	S.	.....	S.	b 3	Naval Militia, Pennsylvania.
Inca	a 120	do	W.	100	S.	b 2	Naval Militia, Massachusetts.
Alvarado	100	Gunboat	S.	137	S.	b 2	Naval Academy, Annapolis.
Sandoval	100	do	S.	137	S.	b 2	Do.
Huntress	82	Gunboat (converted).	Comp.	.....	S.	b 2	Naval Militia, New Jersey.
Basco	42	Gunboat	I.	44	S.	b 2	Asiatic Station.
Gardoqui	42	do	I.	44	S.	b 2	Do.
Urdaneta	42	do	I.	44	S.	b 2	Do.

TORPEDO VESSELS.

Decatur	420	Torpedo-boat destroyer.	S.	8,000	T. S.	a 2	Torpedo-boat flotilla.
Perry	420	do	S.	7,000	T. S.	a 2	Navy-yard, Mare Island.
Preble	420	do	S.	7,000	T. S.	a 2	Do.

a Secondary battery. b Estimated.

List of ships of the United States Navy—Continued.

TORPEDO VESSELS—Continued.

Name.	Displacement (tons).	Type.	Hull.	I. H. P.	Propulsion.	Guns (main battery).	Station or condition.
Cushing (No. 1)	105	Torpedo boat	S.	1,720	T. S.	a 3	In reserve, navy-yard, Norfolk.
Ericsson (No. 2)	120	do	S.	1,800	T. S.	a 3	Do.
Foote (No. 3)	142	do	S.	2,000	T. S.	a 3	Do.
Rodgers (No. 4)	142	do	S.	2,000	T. S.	a 3	Do.
Winslow (No. 5)	142	do	S.	2,000	T. S.	a 3	Torpedo Station, Newport, R. I.
Porter (No. 6)	165	do	S.	b 3,400	T. S.	a 3	In reserve, navy-yard, Norfolk.
Dupont (No. 7)	165	do	S.	b 3,400	T. S.	a 3	Do.
Rowan (No. 8)	182	do	S.	3,200	T. S.	a 3	Puget Sound Naval Station.
Dahlgren (No. 9)	146	do	S.	4,200	T. S.	a 2	Torpedo Station, Newport, R. I.
T. A. M. Craven (No. 10).	146	do	S.	4,200	T. S.	a 2	Do.
Farragut (No. 11)	273	do	S.	5,600	T. S.	a 2	Pacific Station.
Davis (No. 12)	132	do	S.	1,750	T. S.	a 3	Navy-yard, Mare Island.
Fox (No. 13)	132	do	S.	1,750	T. S.	a 3	Do.
Morris (No. 14)	105	do	S.	1,750	T. S.	a 3	Torpedo Station, Newport, R. I.
Talbot (No. 15)	46¼	do	S.	850	S.	a 2	Naval Academy, Annapolis.
Gwin (No. 16)	46	do	S.	850	S.	a 2	Do.
Mackenzie (No. 17).	65	do	S.	850	S.	a 2	Navy-yard, New York.
Wilkes (No. 36)	165	do	S.	3,000	T. S.	c 3	Do.
McKee (No. 18)	65	do	S.	850	S.	a 2	Torpedo station, Newport, R. I.
Bailey (No. 21)	235	do	S.	5,600	T. S.	a 2	Navy-yard, Norfolk.
Somers (No. 22)	145	do	S.	1,900	S.	a 2	In reserve, navy-yard, Norfolk.
Manly (No. 23)	b 30	do	S.	b 250	S.	a 1	Naval Academy, Annapolis.
Bagley (No. 25)	167	do	S.	4,200	T. S.	a 3	Torpedo boat flotilla.
Barney (No. 26)	167	do	S.	4,200	T. S.	a 3	Do.
Biddle (No. 27)	167	do	S.	4,200	T. S.	a 3	Do.
Shubrick (No. 32)	166	do	S.	3,000	T. S.	a 3	Do.
Stockton (No. 33)	166	do	S.	3,000	T. S.	a 3	Do.
Thornton	165	do	S.	3,000	T. S.	b 3	Do.
Stiletto (No. 53)	31	do	W.	359	S.	a 2	Torpedo station, Newport, R. I.
Holland (No. 54)	73	Submarine torpedo boat.	S.	150	S.	a 1	Naval Academy, Annapolis, Md.

TUGS.

Accomac	187	Tug	I.	250	S.	b 2	Navy-yard, Pensacola.
Active	296	do	S.	600	S.	b 5	Navy-yard, Mare Island
Alice	356	do	W.	250	S.	b 2	Navy-yard, Norfolk.
Apache	650	do	W.	550	S.	b 3	Navy-yard, New York.
Chickasaw	100	do	I.	.....	S.	b 1	Do.
Choctaw	350	do	I.	188	S.	b 3	Navy-yard, Norfolk.
Fortune	450	do	I.	340	S.	.....	Navy-yard, Boston.
Hercules	198	do	I.	.....	S.	b 3	Navy-yard, Norfolk.
Iroquois	702	do	S.	1,000	S.	b 3	Naval Station, Hawaii.
Iwana	192	do	S.	300	S.	.....	Navy-yard, Boston.
Leyden	450	do	I.	340	S.	.....	Torpedo Station, Newport, R. I.
Massasoit	202	do	S.	.....	S.	b 1	Naval Station, Key West, Fla.
Modoc	241	do	I.	.....	S.	.....	Navy-yard, League Island.
Mohawk	420	do	S.	400	S.	.....	Navy-yard, Norfolk.
Narkeeta	192	do	S.	300	S.	.....	Navy-yard, New York.
Nezinscot	156	do	S.	400	S.	b 2	Navy-yard, Portsmouth.
Nina	357	do	I.	388	S.	.....	Navy-yard, New York.
Osceola	571	do	S.	.....	S.	b 2	Naval Station, Key West.
Pawnee	275	do	W.	250	S.	.....	Navy-yard, New York.
Pawtucket	225	do	S.	450	S.	.....	Navy-yard, Puget Sound.
Penacook	225	do	S.	450	S.	.....	Naval Station, Port Royal.
Piscataqua	631	do	S.	1,600	S.	b 4	Asiatic Station.
Pontiac	401	do	.....	425	S.	b 3	Navy-yard, New York.

a Torpedo tubes. b Estimated. c Secondary battery.

List of ships of the United States Navy—Continued.

TUGS—Continued.

Name.	Displacement (tons).	Type.	Hull.	I. H. P.	Propulsion.	Guns (main battery.	Station or condition.
Potomac	677	Tug	S.	2,000	S.	a4	Naval Station, San Juan, P. R.
Powhatan	194	do	S.	397	S.	a2	Navy-yard, New York.
Rapido	100	do	I.	70	S.	a1	Asiatic Station (Cavite).
Samoset	225	do	S.	450	S.	.....	Navy-yard, League Island.
Sebago	190	do	S.	.....	S.	a1	Navy-yard, Pensacola.
Sioux	155	do	.....	290	S.	a2	Navy-yard, Portsmouth.
Standish	450	do	I.	340	S.	a1	Naval Academy, Annapolis.
Tecumseh	214	do	S.	500	S.	a2	Navy-yard, Washington.
Traffic	280	do	W.	.....	S.	.....	Navy-yard, New York.
Triton	212	do	S.	300	S.	.....	Navy-yard, Washington.
Unadilla	345	do	S.	500	S.	.....	Navy-yard, Mare Island.
Uncas	441	do	S.	750	S.	a2	Navy-yard, Pensacola, Fla.
Vigilant	300	do	.....	450	S.	a5	Training Station, San Francisco.
Waban	150	do	I.	.....	.....	a1	Naval Station, Habana.
Wahneta	192	do	S.	300	S.	.....	Navy-yard, Norfolk.
Wompatuck	462	do	I.	650	S.	a2	Asiatic Station.

SAILING SHIPS.

Alliance	1,375	.....	W.	.....	Sails	6	Training service (landsmen).
Monongahela	2,100	.....	W.	.....	do	6	Training service (apprentices).
Constellation	1,186	.....	W.	.....	do	8	Stationary training ship, Newport.
Jamestown	1,150	.....	W.	.....	do	.....	Transferred to Marine-Hospital Service.
Portsmouth	1,125	.....	W.	.....	do	12	Naval Militia, New Jersey.
Saratoga	1,025	.....	W.	.....	do	.....	Public Marine School, Philadelphia.
St. Mary's	1,025	.....	W.	.....	do	.....	Public Marine School, New York.

WOODEN RECEIVING SHIPS.

Franklin	5,170	.....	W.	.....	.....	.....	Receiving ship, Norfolk.
Wabash	4,650	.....	W.	.....	.....	.....	Receiving ship, Boston.
Independence	3,270	.....	W.	.....	.....	.....	Receiving ship, Mare Island.
Pensacola	3,000	.....	W.	.....	.....	.....	Training Station, San Francisco, Cal.
Richmond	2,700	.....	W.	.....	.....	.....	Auxiliary to Franklin.
Nipsic	1,375	.....	W.	.....	.....	.....	Navy-yard, Puget Sound.

UNSERVICEABLE.

New Hampshire	4,150	Sailing ship	W.	.....	Sails.	2	Naval Militia, New York, N. Y.
Omaha	2,400	Cruiser	W.	.....	.....	.....	Transferred to Marine-Hospital Service.
Constitution	2,200	Sailing ship	W.	.....	.....	4	Navy-yard, Boston.
Iroquois	1,575	Cruiser	W.	.....	.....	.....	Transferred to Marine-Hospital Service.
St. Louis	830	Sailing ship	W.	.....	.....	.....	Naval Militia, Pennsylvania.
Dale	675	do	W.	.....	.....	.....	Naval Militia, Maryland.
Minnesota	4,700	Cruiser	W.	.....	.....	9	Naval Militia, Massachusetts.
Marion	1,900	do	W.	1,100	S.	8	Naval Militia, San Diego, Cal.
Yantic	900	do	W.	310	S.	4	Naval Militia, Michigan.

a Secondary battery.

NEW VESSELS AUTHORIZED.

At the last session of Congress, by act of July 1, 1902, the construction of the following additional vessels of the Navy was authorized: Two battle ships, one to be built at such navy-yard as the Secretary might designate; two armored cruisers, and two gunboats. In pursuance of this act the Department without delay approved plans for the construction of the two battle ships and directed that work on one of them, the *Connecticut*, be commenced at once at the navy-yard, New York.

The contract for the construction of the other battle ship, the *Louisiana*, has been awarded to the Newport News Shipbuilding and Dry Dock Company, after competition, for the sum of $3,990,000. The specifications for these two battle ships, the most powerful yet laid down by the Navy, call for vessels 450 feet in length upon the load water line; about 77 feet beam; gross draft, about 26¾ feet; trial speed at sea, to be maintained four hours, 18 knots. It is intended to give these vessels each a main battery of four 12-inch, eight 8-inch, and twelve 7-inch breech-loading rifles, and a secondary battery of twenty 3-inch 14-pounder rapid-fire guns, twelve 3-pounder semi-automatic guns, six 1-pounder automatic guns, two 1-pounder semi-automatic guns, two 3-inch field pieces, two machine guns, caliber .30, and six automatic guns, caliber .30.

In pursuance of the requirements of the act of July 1, 1902, above mentioned, instructions have been issued providing for the keeping of an accurate and detailed account of the cost of inspection and construction of these two battle ships, in order that the relative cost of navy-yard and contract construction may be ascertained and reported to Congress as the law directs.

The plans and specifications for two 14,500-ton armored cruisers, the *Tennessee* and the *Washington*, are completed. Bids for their construction will be opened on January 6, 1903. The plans and specifications of the 1,000-ton gunboats, the *Dubuque* and the *Paducah*, will soon be ready.

The plans and specifications of the *Connecticut* and the *Louisiana* were approved by the Department with the purpose of producing "first-class battle ships carrying the heaviest armor and most powerful ordnance for vessels of their class, * * * and to have the highest practicable speed and great radius of action," in accordance with the intention of Congress as expressed in the act authorizing their construction. That is to say, these two vessels are to be battle ships in the strictest sense, equipped with the most powerful guns, and protected by the heaviest armor in use in the Navy; the weights of such armor and armament to be carried, however, without seriously reduc-

ing bunker capacity, since the act also requires that they shall have "great radius of action."

After most careful consideration the speed to be developed was fixed at 18 knots, with a margin, under penalties, of one-half knot, this being regarded as the highest speed that could be attained within the prescribed limitations of cost and displacement, and with due regard to the character of these vessels as battle ships of the first class, able to keep the seas against any war ships afloat.

In making provision, separately from the battle ships, for the two vessels above referred to as the *Tennessee* and the *Washington*, as well as by designating them as "armored cruisers," Congress made plain its desire that they should be vessels of a different type. In drawing the plans and specifications, this purpose has been kept in view, and, accordingly, the *Tennessee* and the *Washington* are to have less armor protection and lighter batteries, but more speed, than the battle ships. They are to be provided with a water-line armor belt of a maximum thickness of 5 inches, instead of 11 inches as in the case of the battle ships; and with respect to armament, where the battle ships will be given four 12-inch, eight 8-inch, and twelve 7-inch guns, the cruisers are to have four 10-inch and sixteen 6-inch guns.

The act prescribes in the case of the armored cruisers also that they shall have "great radius of action," and accordingly their bunker capacity is to be substantially the same as that of the battle ships; but inasmuch as speed is an important characteristic of vessels of the cruiser class, the speed to be attained by the *Tennessee* and the *Washington* has been placed at 22 knots, with a margin, under penalties, of one-half knot.

While thus differing in the salient features of armor, armament, and speed, the distinction between the cruisers and the battle ships is also carried out in minor details of construction. It is believed that these four powerful vessels of war, when built upon the plans and specifications approved by the Department, will fulfill the requirements of the act authorizing them as precisely as the present state of naval construction will admit, and will form a substantial addition to the fighting ships of the Navy.

THE FUTURE OF THE NAVY.

Among the most important lessons learned in the war with Spain was that a modern navy can not be improvised during a war or upon the threshold of a war. Much money was then expended in the purchase of ships. Many of them served useful auxiliary purposes, but it may well be doubted whether they added materially to the fighting efficiency of our fleet. The time best suited to the development and perfection of our Navy is the time when there is neither war nor

threat of war. Happily the present is such a time, and it permits a dispassionate consideration of the future.

The country approves, with hardly a dissenting voice, the policy of strengthening our power upon the sea. What would have been an adequate navy some years ago is totally inadequate for the performance of the duties growing out of our new possessions in the Pacific and Atlantic and the determination of Congress to construct a canal across the Isthmus.

If, then, the policy of strengthening our power upon the sea to the point where it can respond to the national needs be not abandoned, the Navy has manifold needs. There must be additional naval and coaling stations; more ships, fighting and auxiliary; and an increase of officers and men. In all of these respects, Congress in the past has dealt with the Navy wisely and generously, and I doubt not that in the future it will as accurately register the will of the people.

The most imperative need of the Navy to-day is of additional officers. I can not overstate this need. It invites the instant attention of Congress. The administration of the Department is embarrassed almost daily by the lack of officers below command rank. This condition has been approaching for some years, and was clearly apprehended and stated by my predecessor in office. It is acute to-day, and, when the ships already authorized are completed, it will be desperate unless there is early action.

A statement of this kind can not safely rest upon mere assertion, but demands verification by a comparison of the number of officers with the duties which are required of them. Recognizing clearly that the same deficiencies exist in the staff corps and that an enlargement of them is urgently demanded, I will nevertheless here make the comparison solely with respect to the officers of the line, selecting the 1st day of October last as a recent date illustrative of the present condition. Following is a table descriptive of the conditions then existing:

Number of line officers, including midshipmen, required for vessels now on the navy list	1,206
Officers on inspection, court-martial duty, Naval Academy, recruiting, ordnance, equipment, and engineering duty	264
In transit to and from stations	70
Sick	30
Leave or waiting orders	30
Total	1,600
Number of officers now on navy list, including midshipmen after graduation	1,023
Deficiency	577

In the above table only the serviceable ships of the Navy are included, and to them there is allotted only the minimum number of officers required, the allowance being less than that made in the other

navies of the world. It is too obvious to need more than mention that with squadrons in Pacific, Asiatic, European, North and South Atlantic waters, there must always be a certain number of officers in transit from one point of duty to another, and for the time being withdrawn from active duty.

In considering the effect of this table it must be remembered that ordinarily in peace a considerable portion, say one-quarter, of the serviceable ships would be out of commission undergoing repairs and improvements, and that thus approximately three hundred officers would be released for other duty. Even in such case, and by the detachment of officers from every point of duty on shore where the law and the absolute requirements of the service would permit it, we could not in time of peace officer three-quarters of our present fleet.

But any comparison which does not take into account at least the future which is in sight would be totally inadequate, and therefore I project the comparison into the four years of our immediate future. The following table shows the number of combatant ships in course of construction and authorized and the number of officers necessary for them:

Vessels.	Officers.	Vessels.	Officers.
Maine	17	Des Moines	12
Georgia	17	Chattanooga	12
Pennsylvania	17	Tennessee	15
Rhode Island	17	Washington	15
Louisiana	17	Arkansas	7
California	15	Nevada	7
Nebraska	15	Wyoming	7
West Virginia	15	Paducah	7
Maryland	15	5 submarines	5
Colorado	15	Cleveland	12
South Dakota	15	Galveston	12
Connecticut	17	Tacoma	12
Ohio	17	Florida	7
Virginia	17	Dubuque	7
Missouri	17	13 torpedo-boat destroyers	39
New Jersey	17	7 torpedo boats	14
St. Louis	12		
Milwaukee	12	Total officers necessary for the new vessels, for which no provision has been made	498
Charleston	12		
Denver	12		

The importance of these ships is seen at a glance. Allowing the same proportion of officers in transit, on shore duty, sick, and on leave, will require 623 officers to produce the 498 demanded by our new ships. In these four years, moreover, it is estimated that not less than 160 officers will leave the service through resignation, retirement, or death. The deficiency in the number of officers required for the full complement of naval duty as indicated above will be at the end of four years as follows:

Present deficiency	577
Needed for new ships	623
Needed to fill vacancies	160
Total deficiency	1,360

I am informed that under existing conditions 355 graduates of the Naval Academy may be expected during these four years. There is no other source of supply except a number, not exceeding six per annum, which may be obtained by the promotion of enlisted men. Unless, therefore, the above computation can be shown to be erroneous, we shall have in the near future something more than a thousand officers less than the proper complement.

The officers we need can be obtained from three sources only—by appointment from civil life, by promotion from the ranks, or by education and training at the Naval Academy. The first source has been so uniformly rejected by the opinions of all, that I will not discuss it. Congress has indicated its opinion by abandoning this method in the Marine Corps, and would not, it is assumed, adopt it for the line of the Navy. The law already allows promotion from the ranks of not exceeding six enlisted men per annum. The provision of the law is as follows:

> Whenever, in view of the vacancies in the grade of ensign on July thirtieth of any year unfilled by graduates of the Naval Academy, the Secretary of the Navy shall so recommend, the President may appoint to that grade, as of July thirtieth, from among the boatswains, gunners, or warrant machinists, not exceeding six in any one calendar year. No person shall be so appointed who is over thirty-five years of age; who has served less than six years as a warrant officer; who is not recommended by a commanding officer under whom he has served; nor until he shall have passed such competitive examination as may be prescribed by the Navy Department.—Act of March 3, 1901.

Under this law there have been up to the present time three warrant officers commissioned as ensigns: Henry B. Soulé, formerly a gunner, appointed an ensign from the 30th day of July, 1901; Francis Martin, formerly a gunner, appointed an ensign from the 30th day of July, 1901; Louis J. Connelly, formerly a gunner, appointed an ensign from the 30th day of July, 1902.

I recommend that this law be amended so as to permit the promotion of not more than 12 per annum.

But the main source of our supply of officers must be from the Naval Academy. The duties of the modern naval officer are so varied and complex that they demand a rigorous and protracted education and training. This training and education can best be obtained at the national school at Annapolis. That school produces officers the equal of any in the world. When the best are obtainable, we need not content ourselves with anything less than the best. The nation has devoted many millions of dollars to the upbuilding of this school, instituted and maintained for the single purpose of producing naval officers of the highest type.

With the utmost wisdom, Congress has prescribed that the students shall be selected in uniform proportions from all sections of our country, and, in practice, all classes of our people are represented there.

Naval officers do not constitute a caste; our system of selection brings to our service each generation the new blood of our democracy. It admits none by favor; it excludes all except those of the highest mental and physical vigor. Thus selected, thus educated, inspired by our naval traditions, we may be assured that these young men will reach and maintain the highest standard of efficiency.

I therefore earnestly recommend that without a year's delay the number of midshipmen at the Academy be increased sufficiently to meet present and prospective needs of the service.

It should be stated that as the Navy is now constituted there is and will be in the immediate future a sufficient number of officers above the rank of lieutenant-commander. The increase should be in the number of lieutenant-commanders, lieutenants, and ensigns, and care can and should be exercised to prevent stagnation in promotion, in order that officers may attain command rank at a sufficiently early age, for reasons which are so obvious and have been so frequently stated that they need no repetition.

It has sometimes been suggested that the insufficiency of officers is due in part, at least, to the number detailed for the performance of shore duty. This suggestion demands careful consideration. The number of officers on shore duty is to some extent within the control of the Secretary of the Navy, and to that extent is a question of administration merely. Early after the assumption of the duties of my office I issued a circular letter, of which the following is an extract:

> I am advised that the increase of the ships and enlisted men of the Navy results in a demand for officers for the active duties on board ship, the training of enlisted men on shore, and other shore duties of a naval and military nature. For this reason the Department desires a reduction to the amount of not less than 20 per cent in the number of officers employed on work not purely naval or military, wherever such reduction is practicable. You will please make such arrangements as will tend to produce this result, notifying the Bureau of Navigation of positions that can be vacated by commissioned officers now serving therein on the assumption that their duties may be performed by civilians or by retired officers of the Navy, or merged with those of other positions.
>
> The Department does not contemplate sudden action in this matter, but desires changes, where practicable, to be made gradually. The Department fully realizes that many naval duties of the highest importance must be performed on shore, and that the complete equipment of a naval officer demands shore duty of certain kinds as well as sea service, but desires the work performed by officers, whether at sea or on shore, to be of a naval or military character.

The efforts of my predecessor and myself have diminished the number of line officers on shore duty from 275 on January 1 last to 203 on November 15 current, being a reduction of 72, or 28 per cent. The percentage of officers on shore duty on January 1 was 26.8, and on November 15 was 19. This reduction has not been accomplished without the protest of some of the ablest officers, especially those at

the heads of the several bureaus. The weight of this protest is not overlooked, and it is recognized that in some cases the action of the Department can only be justified by the fact that officers have been detached from stations on shore for the performance of more essential duties at sea. There follows a table showing the detail of the above statements, and a list of the officers serving on shore duty on November 15, with the positions which they respectively fill.

Number of line officers available for sea duty performing shore duty.

Rank.	Jan. 1, 1902.		Nov. 15, 1902.	
	Number.	Per cent.	Number.	Per cent.
Rear-admirals	14	51.4	15	51
Captains	36	50	34	46.6
Commanders	50	42.7	45	38.5
Lieutenant-commanders	58	33.1	52	30.2
Lieutenants	81	26.4	44	14.6
Lieutenants, J. G.	36	46.1	12	12.7
Ensigns	0	.0	1	.7
Midshipmen	0	.0	0	.0
Total on shore	275	26.8	203	19.0
Of line officers in service	1,023		1,045	

Reduction of officers on shore, 80, or 29.09 per cent.

SHORE DUTY OF LINE OFFICERS.

REAR-ADMIRALS.

George C. Remey, Light-House Board (chairman).
John C. Watson, president naval examining and retiring boards.
Louis Kempff, naval coast defense, district Pacific coast.
Albert S. Barker, commandant navy-yard, New York.
Charles S. Cotton, commandant navy-yard, Norfolk, Va.
Silas W. Terry, commandant navy-yard, Washington, D. C.
Merrill Miller, commandant navy-yard, Mare Island, Cal.
John J. Read, commandant navy-yard, Portsmouth, N. H.
Mortimer L. Johnson, commandant navy-yard, Boston, Mass.
Henry C. Taylor, Chief Bureau Navigation.
Charles E. Clark, governor, Naval Home.
Philip H. Cooper, coast defense, district Atlantic coast.
James H. Sands, commandant navy-yard, League Island, Pa.
William C. Wise, commandant Pensacola Navy-Yard and Coast-Defense District.
Yates Stirling, commandant Puget Sound Navy-Yard.
Total number in grade, 24; number on shore duty, 15; 51 per cent.

CAPTAINS.

Purnell F. Harrington, captain of the yard, New York, N. Y.
Francis A. Cook (sick leave).
Colby M. Chester, superintendent Naval Observatory.
Charles J. Barclay, captain Boston Navy-Yard.
Charles D. Sigsbee, Chief Intelligence Officer.
Benjamin P. Lamberton, Light-House Board.

Charles O'Neil, Chief Bureau Ordnance.
Bowman H. McCalla, president board inspection and survey, Mare Island.
French E. Chadwick, president War College.
Theodore F. Jewell, member retiring board and examining board.
William M. Folger, inspector Third light-house district.
George F. F. Wilde, captain Portsmouth Navy-Yard.
Charles J. Train, president board inspection and survey.
Royal B. Bradford, chief Bureau Equipment.
Willard H. Brownson, superintendent Naval Academy.
Edwin Longnecker, commandant Port Royal Station; also Charleston, S. C.
Robert M. Berry, captain Norfolk Navy-Yard.
Samuel W. Very, ordnance inspector, Boston yard.
George A. Bicknell, commandant naval station, Key West.
Charles T. Hutchins, naval secretary, Light-House Board.
Benjamin F. Tilley, captain, Mare Island Navy-Yard.
John P. Merrill, charge naval station, Algiers, La.
Edwin C. Pendleton, superintendent Naval Gun Factory, Washington yard.
Frederick M. Symonds, course instruction, War College.
Henry B. Mansfield, charge recruiting station, New York, N. Y.
William Swift, Bureau Navigation, special duty, General Board.
James M. Miller, navy-yard, New York, N. Y.
John V. B. Bleeker, War College.
Edward H. Gheen, charge recruiting station, also branch hydrographic office, Chicago.
Harrison G. O. Colby, recruiting office, Boston, Mass.
Leavitt C. Logan, Bureau Equipment.
Conway H. Arnold, special duty, wireless telegraphy, Bureau Equipment.
William S. Cowles, assistant chief, Bureau Navigation.
Number in grade, 73; number on shore duty, 33 (46.6 per cent).

COMMANDERS.

John E. Pillsbury, member General Board.
Chas. C. Cornwell, Naval Home, Philadelphia.
Raymond P. Rodgers, equipment office, New York yard.
Thos. C. McLean, recruiting officer, Baltimore, Md.
Wm. J. Barnett, member General Board.
Francis H. Delano, League Island yard.
Edw. K. Moore, equipment department, Boston yard.
Wm. H. Everett, ordnance office, Norfolk yard.
John M. Hawley, light-house inspector, Baltimore, Md.
Perry Garst, light-house inspector, Tenth district.
Jas. K. Cogswell, inspector equipment, Portsmouth yard.
Thos. H. Stevens, Puget Sound Navy-Yard.
Chas. G. Bowman, Sixth light-house district.
Wm. H. Beehler, Naval Intelligence.
Jno. B. Briggs, ordnance department, New York yard.
Richard G. Davenport, Washington yard.
Herbert Winslow, Eleventh light-house district.
Chas. E. Colahan, Naval Academy.
Clinton K. Curtis, equipment office, Norfolk yard.
Chas. A. Adams, New York yard.
Kossuth Niles, inspector Eighth light-house district.
John Hubbard, inspector Fourth light-house district.

Alexander McCrackin, Mare Island yard.
Geo. L. Dyer, Naval Academy.
Jos. B. Murdock, War College.
Hugo Osterhaus, Naval Academy.
John B. Collins, captain yard, Pensacola.
Nathan Sargent, aid Admiral; also, General Board.
Jas. H. Bull, inspector Seventh light-house district.
Greenleaf A. Merriam, inspector First light-house district.
Jno. B. Milton, inspector Twelfth light-house district.
Wm. A. Marshall, inspector Fifteenth light-house district.
Carlos G. Calkins, inspector Thirteenth light-house district.
Edw. F. Qualtrough, supervisor harbor, New York.
Asher C. Baker, Louisiana Purchase Exposition, St. Louis.
Wm. H. H. Southerland, hydrographer, Bureau of Equipment.
Lucien Young, inspector, Ninth light-house district.
Jno. C. Freemont, member Board of Engineers, War Department.
Albert Mertz, equipment department, Boston yard.
Thos. B. Howard, Naval Academy.
Walter C. Cowles, board of inspection and survey.
Chas. J. Badger, Bureau of Equipment, compass officer, also wireless telegraph.
Reginald F. Nicholson, Bureau of Navigation.
Edmund B. Underwood, secretary general board.
Wm. F. Halsey, Naval Academy.
Total number in grade, 117; number on shore duty, 45—38½ per cent.

LIEUTENANT-COMMANDERS.

Henry A. Morrell, New York yard.
Charles B. T. Moore, equipment department, Mare Island yard.
Ten Eyck D. W. Veeder, Bureau Equipment.
Hamilton Hutchins, League Island yard, Equipment.
John M. Boyer, Washington yard, Naval Gun Factory.
Bernard O. Scott, ordnance inspector, Cramp's.
William G. Cutler, Naval Academy.
Cameron McR. Winslow, Bureau Navigation.
Frank F. Fletcher, Torpedo Station.
Alexander Sharp, jr., Bureau Navigation.
James T. Smith, equipment department, New York yard.
Henry C. Gearing, Naval Academy.
Burns T. Walling, New York yard.
James H. Sears, branch hydrographic office, New York.
Charles C. Rogers, Bureau Equipment.
Washington I. Chambers, Torpedo Station.
William Braunersreuther, Naval Gun Factory, Washington yard.
William S. Hogg, Washington yard; also equipment, Richmond, Va.
William F. Fullam, Naval Academy.
John N. Jordan, inspector equipment, Schenectady.
Edw. E. Wright, equipment, Boston yard.
William S. Benson, Naval Academy.
James H. Oliver, War College.
Simon Cook, inspection equipment and ordnance, Union Iron Works.
Percival J. Werlich, Newport News Ship Building and Dry Dock Company.
Edw. J. Lloyd, jr., Naval Academy.
Harry N. Huse, Naval Academy.
George H. Stafford, Mare Island yard, steam-engineering department.

William P. White, inspector equipment and ordnance, Crescent Shipyard.
John H. Shipley, ordnance department, Washington yard.
Walter J. Sears, Bliss Works, Brooklyn, torpedo inspector.
John A. Bell, inspector ordnance, Hartford.
John B. Bernadou, Naval Intelligence.
John H. Gibbons, Naval Intelligence.
Total number in grade, 172; total number on shore duty, 34—20 per cent.

LIEUTENANTS.

Jos. H. Rohrbacher, assistant inspector ordnance, Munhall, Pa.
Wm. B. Fletcher, War College.
Jos. F. Jayne, Bureau Equipment.
Jno. M. Poyer, Naval Academy.
Harry George, Bureau Equipment.
Clarence S. Williams, Naval Academy.
Frank K Hill, Bureau Ordnance.
Walter O. Hulme, Naval Academy.
Wm. R. Shoemaker, Naval Academy.
Isaac K. Seymour, Bureau Ordnance.
Volney O. Chase, assistant chief, Bureau Ordnance.
Edw. W. Eberly, New York yard, aid to commandant.
Harold K. Hines, Naval Academy.
George F. Cooper, Naval Academy.
Josiah S. McKean, Naval Academy.
Charles H. Hayes, New York yard.
George W. Logan, Hydrographic Office.
Henry F. Bryan, Bethlehem Steel Company.
Frank Marble, Naval Intelligence.
Oscar W. Koester, New York yard.
Edward L. Beach, Naval Academy.
John B. Patton, Naval Proving Ground.
Arthur B. Hoff, Naval Academy.
Wm. D. MacDougal, naval gun factory, Washington yard.
Cleland N. Offley, Naval Academy.
Urban T. Holmes, Bureau Steam Engineering.
Jehu V. Chase, War College.
Geo. W. Williams, General Board.
Reginald R. Belknap, Bureau Navigation.
Richd. H. Leigh, Naval Academy.
George W. Laws, Naval Academy.
Fredk. L. Sawyer, Naval Academy.
Chas. T. Jewell, Naval Academy.
Fredk. A. Traut, Naval Academy.
Jno. F. Hines, Naval Academy.
Yates Stirling, Puget Sound Navy-Yard.
Walter Ball, assistant inspector machinery, Quincy, Mass.
Walter S. Crosley, General Board.
Martin E. Trench, Naval Academy.
Andre M. Proctor, Naval Academy.
Gilbert G. Gilbraith, ordnance inspector, Pittsburg.
John M. Hudgins, Bureau Equipment.
Roscoe C. Moody, Naval Academy.
Geo. L. P. Stone, Bureau Navigation.
Total number in grade, 300; number on shore duty 44—14 per cent.

LIEUTENANTS, JUNIOR GRADE.

Duncan M. Wood, recruiting duty.
Edw. McCauley, Bureau Ordnance.
Needham L. Jones, Naval Academy.
Wm. R. White, Bureau Steam Engineering.
Clarence S. Kempff, naval defense, San Francisco.
Harlan P. Perrill, Torpedo Station.
Daniel S. Mahony, Bureau Steam Engineering.
Thos. C. Hart, Naval Academy.
Leonard R. Sargent, Torpedo Station.
Joseph W. Graeme, Naval Gun Factory.
Oscar D. Duncan, Naval Academy.
Robert W. Henderson, Torpedo Station.
Total number in grade, 94; total number on shore duty, 12; 12.7 per cent.

ENSIGNS.

David C. Hanrahan, recruiting duty.
Total number in grade, 136; total number on shore duty, 1.

MIDSHIPMEN.

Total number in grade, 125; total number on shore duty, 0.

It will be observed that the reduction in the number of officers on shore duty has been almost entirely in those of the grades from lieutenant-commander down, of whom there are now only 109 out of 707 on shore duty. The demand upon the officers of those grades has been great both at sea and on shore, at sea because they are the watch officers, on shore because they have been thoroughly educated, especially the younger of them, in the recent development of technical subjects which in the modern navy are of the highest importance. These officers have responded nobly to the demands of the service and have met every duty required of them. They deserve the approval of the country, as they receive the commendation of the Department.

Shore duty can not be abolished entirely. An examination of the shore stations now occupied shows that many of them are prescribed or contemplated by law, and many, if not most, of the others are essential to the proper development of the Navy and can not be discontinued without imperiling its efficiency. There is another aspect of duty on shore which can not safely be disregarded, and that is its effect on the individual officer. He can not be properly developed for the responsibilities of command of the complicated mechanisms which float under the names of battle ships and cruisers without the knowledge and experience obtainable only by service at the stations on land. Nor can he, without disregard of the plainest principles of humanity, be required to abandon all family ties.

The difficulty is in administration, to apportion properly among the officers shore and sea duty. Sometimes by favoritism officers of the Navy may obtain long tours of duty on shore, necessarily at the expense

of others, and sometimes an officer who possesses exceptional scientific equipment is, for that reason, kept upon shore duty so long that his efficiency as a seagoing officer and as a commander of men is endangered.

I shall endeavor to apportion among officers sea and land service as justly as conditions will permit. But it is well worth consideration whether a certain proportion of service at sea should not be required by law as an indispensable condition of promotion. Such requirements are made by law or practice in other navies.

The chiefs of the several bureaus, in their annual reports for the fiscal year, make recommendations of importance upon the special subjects under their charge, and set forth particularly the needs, both as to matériel and personnel, of the branches of the Navy over which, respectively, they have supervision. Without undertaking here to repeat or discuss these recommendations in detail, I commend them to considerate attention, deeming it sufficient to say that in dwelling, as I have done, upon the needs of an increase of the line, I do not mean to minimize the importance of a corresponding increase of the staff corps. On the contrary, it appears to require no argument to show that such proportionate increase should be made.

ENLISTED MEN.

The number of enlisted men in the naval service on June 30, 1902, was 21,433. Of these 8,032 were landsmen for training and apprentices. Many of these came from the middle Western States, and at the time of their enlistment were unacquainted with the new life upon which they had entered. Their progress has been eminently satisfactory.

All men now enlisted are required to be either citizens or to have declared their intention to become such. Eighty-nine per cent of the enlisted force are now citizens and 76 per cent are native born. Ninety-three and three-tenths per cent of the landsmen for training and 94 per cent of the apprentices are native born.

The advance in general intelligence and education of the enlisted men presents new problems which, with all other questions concerning them, are receiving the critical attention of the Department. It is believed that in intelligence, education, adaptability to the service, and fidelity to its interests our men will compare favorably with those of any other navy.

The work of the Naval Young Men's Christian Association has become so important and beneficial to the enlisted men of the Navy and Marine Corps that it deserves public recognition. In May last, near the New York Navy-Yard, a fine building completely equipped was dedicated and opened to the uses of the men. The building with its furniture and equipment was given by patriotic and public-spirited

women. There is here furnished what is practically a clubhouse in which the men can, at a reasonable price, obtain excellent meals and lodging and opportunity for healthful and rational recreation. At Norfolk, more recently, a like institution has been established. Work of this kind is entirely beyond governmental scope and must always depend on private munificence. Good results already abundantly appear, and I take this occasion to extend the thanks of the Navy to our benefactors.

In the Mess Manual, recently promulgated by the Department, provision is made for the establishment of stores on the various vessels of the Navy for the sale of miscellaneous articles not provided for in the ration. It is believed that the establishment of such stores would add to the comfort of the enlisted men and obviate danger to health from miscellaneous purchases under usual harbor conditions. It has been found a serious drawback that there is no fund from which such stores can be stocked. Stores can only be established when the capital for the original stock of goods is made up by subscription by the men of the ship. This has been found to be unsatisfactory in practice, and I recommend that the Department be authorized by law to provide these stores, with a provision for reimbursement. This would not add at all to the public expenditures. It should also be added that beer or other intoxicating drinks can not under any circumstances constitute a portion of the stock of the stores so established.

The present number of enlisted men authorized by law is 28,000. By enlistment since the close of the fiscal year, the number of men in the service has been brought up to 25,258 on November 15, current, and it is believed that by February next the full number authorized will be enlisted. The same reasons which demonstrate the necessity for an increase of officers call for the increase of men. The increase can be made gradually, and I recommend that an addition of 3,000 be authorized during the next fiscal year.

Many of our men leave the service at the completion of the first enlistment. One cause of this is that they have received in the service a training which fits them for positions of responsibility in civil life with compensation greater than the Navy can afford to pay. Such an education is not wasted but inures to the public welfare. Moreover, it may be hoped that those who leave the Navy at the end of a single enlistment would constitute an unofficial reserve which might be drawn upon in time of need.

INCREASE OF SHIPS.

After most careful consideration, I believe it to be my duty to recommend a continuance without interruption of the increase of ships. The precise type of ships authorized must, of course, like the authorization itself, be referred to the wisdom of Congress, to whose

committees recommendations in detail may be made. Differences of opinion exist among naval authorities, but all agree that not less than two battle ships should be among the number authorized. Whether the others should be of the armored-cruiser type or of the unarmored cruiser and gunboat type which have proved so useful, may well be left for future discussion.

A permanent ambulance or hospital ship, designed for hospital purposes only, and having the right to fly the flag of the Geneva Conference, would undoubtedly prove an important adjunct to extended naval maneuvers, whether in time of war or peace. The work of the *Solace* and *Bay State* throughout the period of the Spanish war, in the West Indies and during subsequent activities in the Far East, established the value of hospital ships in time of war.

In time of peace such a vessel should accompany each large squadron in the more serious evolutions as a hospital, and also as a recreation asylum for debilitated members of the ships' companies. But their most important service would be as ambulance vessels, to carry the sick and disabled from the fleets or from tropical island stations to naval hospitals, giving them while in transit intelligent and wholesome care. Two vessels of this type, one for the Atlantic and one for the Pacific, to be equipped for the work outlined in time of peace, and ready for instant service in time of war, are earnestly recommended.

NAVAL STATIONS.

There is no subject which deserves more careful consideration than that of naval stations. Their situation and development have sometimes been controlled more by accident and local wishes than by the broader consideration of national needs. We surely have an abundance of them within the United States, but there is imperative demand for the establishment of a naval station in the Philippines and in the West Indian islands or the Caribbean. My own experience leads me to express the hope that Congress will make some provision which will enable the committees especially charged with the consideration of naval affairs to inspect our naval stations. I can not but believe that such an examination would result in very considerable economy in public expenditures. If the examination could be extended, as it should be, beyond the seas, it would insure the selection of proper sites and their development on wise and economical lines.

PROTECTION OF ARTISAN EMPLOYEES.

In your message to the first session of the Fifty-seventh Congress you said:

> The National Government should demand the highest quality of service from its employees, and in return it should be a good employer.

There are employed as artisans under this Department about 15,000 men. With them Congress has dealt liberally in respect of vacations, hours of labor, and rates of pay, but in one respect their condition compares unfavorably with those in private employment. If one of them, while in the exercise of due care, suffers injury or death through the negligence of the Government, he is absolutely without remedy either at common law or under any statute. The only compensation which may be given him is, in the case of personal injury, a special preference for reemployment, which has in some cases operated to the detriment of the public service.

It is a constant occurrence in the navy-yards that subscriptions are taken up among the officers and men for employees who have been injured and whose families are in distress during their period of enforced idleness. I earnestly hope that this omission in our law may be cured by legislation, and that the artisan employees of this department injured without fault of their own may be afforded a remedy. An injury which destroys or impairs the capacity to work of a man who works with his hands is an overwhelming calamity to himself and those dependent upon him. His death often throws upon the world a helpless family. It is but simple justice that in this respect the Government artisan should be placed upon an equality with his brother in private employment. The total cost to the Treasury would be small, though the benefit to him and his family would be great.

NAVAL ACADEMY.

The act for rebuilding the Naval Academy, approved June, 1900, authorized the expenditure of $8,000,000, and provided that plans, covering the entire improvements, should be adopted by the Secretary before any part of said sum should be expended.

The Secretary approved plans October 3, 1900, and allotted such sums for the several buildings and improvements contemplated as would cover $8,000,000, reserving $390,000 as a contingent fund.

The act of July, 1902, appropriating for the improvements at the Academy in accordance with these plans, authorized the building of a hospital at a cost not to exceed $100,000, and additional dredging at a cost of $200,000, and further provided that the cost of such hospital and dredging should be paid out of said $8,000,000. As in obedience to the law, my predecessor had allotted the $8,000,000 prescribed as the limit of cost of the improvements at the Academy, it is impossible to execute the provisions for the erection of a hospital and for dredging without exhausting the fund reserved for contingencies, which is already sufficiently small. Accordingly these two improvements will not be undertaken without further authority from Congress. But a still more serious question has arisen. The architect in

charge of the improvements reports, after careful investigation, that the cost of labor and material to be used in the buildings and improvements not already under contract has increased more than 30 per cent since the original plans were adopted. It has therefore become impracticable to proceed further in the execution of the general plan without largely exceeding the limit of cost prescribed by Congress. No further contracts will be entered into until the subject is submitted to Congress and its will ascertained.

LIQUID FUEL.

From time to time during the past forty years attempts have been made by various foreign governments, as well as by our own, to utilize oil as a fuel for naval purposes. The principal objects sought to be accomplished by such substitution are the reduction of the complement of men in the fire room, extension of the steaming radius of war vessels, and the attainment of maximum speed at short notice. By reason of important discoveries of crude petroleum a great impetus has recently been given to the use of oil as a fuel. The military value of these discoveries is enhanced by the fact that the oil wells have been found near tide water, thus permitting their product to be delivered at comparatively slight cost to the tanks of deep-draft vessels; and the belief is prevalent that the output of crude oil will increase rather than diminish in the near future.

Congress, at its last session, by a clause contained in the act making appropriations for the naval service for the coming fiscal year, authorized the expenditure of $20,000 "for extended tests of liquid fuel" for naval purposes "from the California and Texas oil fields, under the direction of the Bureau of Steam Engineering, Navy Department." In pursuance of this authorization a series of official experiments have been made since the beginning of the present fiscal year by a board of naval officers. In conducting these tests the board has had at its disposal a thoroughly equipped experimental plant built by private parties for the purpose. Previous to the liquid-fuel experiments an extended series of tests had been made, all under the same boiler, various qualities of coal being used as a combustible, and both natural and forced draft being employed. This boiler was likewise used for conducting the oil tests.

Fourteen official tests have been made, from which valuable information has been secured, and particular attention is invited to the data collected by the Board as embodied in the very complete tables printed in connection with the report of the Chief of the Bureau of Steam Engineering. In accordance with the law making appropriation for carrying on these tests, the direct purpose of the investigation has been to ascertain the value of liquid fuel for naval purposes; but it has been impossible to conduct such a series of elaborate experiments

in a new and important field of research without developing facts of great value to engineering experts pursuing like lines of inquiry in the commercial world. In deference to the widespread public interest in the subject, it has been deemed advisable, although the work of the Board is not completed, to submit a preliminary report, giving the information that has already been secured. In the judgment of the members of the Board, the experiments thus far made lead to the following conclusions:

1. That oil can be burned under an ordinary boiler in a uniform manner. Whether better results may be obtained by a form of boiler specially designed for the use of liquid fuel is a matter for future determination.

2. That unsatisfactory results are obtained where the attempt is made to burn oil in the same manner as coal. This is believed to have been the cause of many failures in the past.

3. That the best results are obtained by atomization of the liquid fuel, and that the efficiency of the oil burner is proportionate to its power to atomize the oil and convert the minute particles thus obtained into a mixture of combustible gas and fine particles of carbon, in order that complete combustion may result, and, when necessary, the consumption of oil be forced.

4. That the oil before being fed to the burners should be heated. This facilitates atomization, and a high temperature promotes a uniform flow of oil to the burners.

5. That the air requisite for combustion should also be heated before entering the furnace, in order to assist the gasification of the oil product.

6. That either air or steam may be used for atomizing purposes, but that thermal efficiency is not increased by the use of steam.

7. That the consumption of liquid fuel probably can not be forced to quite so great an extent with steam as the atomizing agent as when compressed air is used for such purpose.

8. That when using steam for atomizing the oil high pressures are advantageous.

9. That a marine steam generator can be forced to as high degree with oil as with coal.

10. That under heavy forced-draft conditions it has not yet been found possible to prevent smoke from issuing from the stack, although careful effort so to do was made.

11. That no ill effects upon the boiler were noted as the result of the oil tests.

12. That the efficiency of an oil-fuel plant is more dependent upon the general character of the installation of the auxiliaries and fittings than upon the form of the burner.

13. That firemen generally look with favor upon the substitution of oil for coal.

As the result of the investigations thus far conducted the Chief of the Bureau of Steam Engineering recommends the installation of liquid-fuel appliances without delay in at least a third of the torpedo boats and destroyers. With respect to the larger war vessels, and particularly the battle ships, the installation of liquid fuel presents serious difficulties, entirely apart from the question of the satisfactory use of oil under boilers. The safe and convenient storage of a sufficient supply of liquid fuel beneath the protective decks of large ships of war, and the question of replenishing exhausted fuel supply, whether in time of war or peace, in case of vessels liable to be sent without warning to unfrequented harbors, are grave matters. Inasmuch as such obstacles are more easily dealt with in the case of commercial steamers, the problem of installing liquid fuel upon fighting vessels differs in important features from the same problem as applied to transports or to the mercantile marine.

ORDNANCE.

During the past year 233 guns, chiefly of large caliber, have been manufactured at the Naval Gun Factory, making a total of 1,210 guns thus far made at that establishment. No material change has been made in the method of gun construction, except that the tubes of all guns of and above 6 inches in caliber are now reinforced to the muzzle. Very great increase in energy has, however, been obtained by increasing the length and weight of guns and by the use of smokeless powder.

The manufacture of armor has progressed satisfactorily, 7,612 tons having been delivered at the various shipyards during the past year, and a considerably larger quantity will probably be delivered during the ensuing year. The armor manufacturers recently made a voluntary reduction of 10 shillings per ton in royalty for the Krupp process.

The manufacture and introduction of smokeless powder has been proceeded with as rapidly as practicable. Beginning with the *Kearsarge* and *Kentucky*, all the new ships of the Navy and some thirty of the older vessels have been supplied with smokeless powder. No other powder has been bought or manufactured for the Navy since 1898, except for auxiliary purposes.

The most interesting event of the year in connection with projectiles is the development of a new type of shell having the perforating power of an armor-piercing projectile, with a capacity for a large bursting charge. Several lots of such projectiles have passed the required test of perforating unbroken a plate of hard-faced armor a caliber in thickness, remaining in condition for effective bursting.

During the fiscal year 34 ballistic tests of armor were made and 128 guns, chiefly of large calibers, were tested at the naval proving

ground; also 486 projectiles, 100 samples of smokeless and 5 lots of brown powder.

No accidents to guns have occurred during the year at the proving ground. In July last one of the powder drying houses was struck by lightning, and the building and its contents were destroyed by fire. There was, however, no explosion.

During the past year classes of officers and enlisted men have been instructed at this station in electricity, torpedoes, and explosives.

All new small arms purchased for the Navy for several years past have been of caliber .30, the same as used by the Army. There remain, however, a number of six-millimeter rifles still in service, which will be retired as soon as practicable.

The Chief of the Bureau of Ordnance calls attention to the urgent need of a new naval magazine at Boston. There is no naval magazine worthy of the name east of New York, a state of affairs bad enough in time of peace, but which would become serious in the event of war. The present magazines at Boston, built in 1835, and located on part of the reservation in Chelsea where the U. S. Naval and U. S. Marine Hospitals are situated, are too near to populous portions of the city to be longer used for the purpose. Large manufacturing interests have grown up in proximity to these magazines. The explosion of 6 tons of black powder, occurring on Governors Island, in Boston Harbor, on the 7th of September last, illustrates the danger of storing naval ammunition in the neighborhood of structures used for other purposes, whether private or public. The Bureau submits an estimate of $300,000 for the construction of magazines in a suitable location, and expresses the belief that if such appropriation is made there will be no difficulty in procuring an appropriate site in such place as to be readily accessible by rail and water without rendering necessary the transportation of ammunition through the streets of the city.

EQUIPMENT.

The Chief of the Bureau of Equipment reports the purchase, after investigation, of apparatus for the purpose of conducting experiments in wireless telegraphy, according to four different systems recently developed in Europe and offering promise of usefulness to the Navy. Stations have been established at the navy-yard, Washington, and at Annapolis, Md., and experiments will thus be conducted between points distant from each other about 30 miles. Upon the completion of a series of overland tests, it is proposed to install one set of each kind of apparatus on board a ship and the corresponding set at Annapolis, Md., in order to conduct tests from ship to shore at varying distances. The next step will be to install apparatus on board separate ships, in order that tests may be made at sea, outside of land interferences.

In order to ascertain the effect of varying climatic conditions upon the workings of wireless apparatus a station will also be established at Key West, Fla. A number of vessels of the Navy have been prepared, so far as the necessary changes in their masts are concerned, for the installation of wireless apparatus. If satisfactory arrangements can be made for the acquisition of instruments developed by other systems the Department will undertake tests to determine their value to the Navy.

In recommending that the Government obtain control of all wireless telegraph stations, the Chief of the Bureau of Equipment says:

> It appears to be well established that the operation of any wireless transmitting apparatus will affect any wireless receiving apparatus within a certain distance, which distance may be considered as its radius of influence. As a direct consequence thereof the signals which may be sent by other wireless transmitters within this radius of influence will be more or less obscured at all receiving stations within the same circuit; in other words, when the transmission of wireless messages is attempted by two or more operating stations at the same time, their interference will probably prevent the reception of a legible message at any receiving station. It is claimed by certain inventors that this interference can be overcome, but these claims do not appear to be substantiated, and it is therefore possible at present for any operator controlling a powerful transmitting apparatus to prevent the reception of a message within its radius of influence.
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> In time of war the Department will undoubtedly find it necessary to communicate by means of wireless telegraphy with certain receiving stations along the coast. Nothing should be permitted to interfere with the transmission of such messages, nor should it be possible for unauthorized persons to receive them.

While the total quantity of coal consumed by the Navy during the fiscal year shows an increase of 18 per cent, there was a decrease of 16 per cent in foreign and an increase of 34 per cent in domestic coal used. Of the coal purchased for the Navy (382,040 tons) 293,438 tons were purchased within the United States, at an average cost per ton, including transportation, of $5.26. At present the Navy is obtaining the best domestic coal, at a cost of "about $2.50 per ton f. o. b. at the tidewater outlets of the mines." Ships on our own coast and in the West Indies can therefore be supplied at reasonable rates; but in the Pacific, where good coal is scarce, and where it must be transported long distances, and in the Orient, the cost is two or three times as great. The foreign coal bought during the year, 88,602 tons only, was procured at an average price of $7.63 per ton.

The act of Congress approved March 3, 1901, contained a clause appropriating the sum of $150,000 to enable the Secretary of the Navy "to acquire land for a naval station and harbor and channel defense, at Pearl Harbor, Hawaii." In pursuance of this authorization about 719 acres, chiefly on the mainland, have been acquired.

DOCKAGE AND BERTHAGE.

The steel floating dry dock constructed at Baltimore, which has the distinction of being the largest structure of its kind in the world, has been successfully towed from Sparrow Point, Chesapeake Bay, where it was built, to the naval station, New Orleans, La. It sustained without injury the long ocean trip and the tests prescribed by the contract, and has been accepted. It constitutes a valuable addition to the docking facilities of the Navy, being one of the two dry docks completed capable of accommodating the largest battle ships. Its first work was the docking of the battle ship *Illinois*.

The steel floating dry dock at Havana, formerly the property of Spain, was acquired by this Government by purchase, and was so far repaired and improved as to be about ready for use when it broke down under weights to which it was subjected in the course of docking pontoons. At the date of this report it is being towed from Habana to the Pensacola Navy-Yard.

Dry docks of concrete and stone, capable of accommodating the largest vessels of the Navy, are in process of construction at the navy-yards at Boston, Portsmouth, League Island, Charleston, and Mare Island.

Progress has been made toward providing additional berthing accommodations for vessels lying at the several yards for purposes of repair and outfit. The Chief of the Bureau of Yards and Docks reports that the acquirement at the Boston Navy-Yard of a large tract of underwater land, conveyed to the United States without cost by the State of Massachusetts, has enabled the Bureau to project and construct piers extending outward from the original wharf line over such submerged land, thus greatly increasing the number of vessels accommodated by the wharves and facilitating the handling of work at that station. In the same line is the deep-water basin under construction at Norfolk, which will soon be available. Additional berths are also being provided at Mare Island, Cal., and Puget Sound, Washington.

The adoption for these purposes and for dry docks of the more permanent concrete construction, replacing the wooden structures, is an important step in advance. The Chief of the Bureau reports that the public works at the navy-yards will be far short of the necessities of the service when all improvements now in progress and projected are completed.

HEALTH OF THE NAVY.

The health of the Navy and Marine Corps has been good throughout the past year, the percentage of sick and the death rate being lower than for several years past.

Notwithstanding the fact that cholera appeared in Manila in March last, and has since that time been more or less prevalent among the

natives elsewhere in the Philippine Islands, there have been few cases among the naval forces. This exemption is due in large measure to prompt precautions taken. Nevertheless, the death from this disease of Lieutenant Rask, U. S. Marine Corps, of Warrant Machinist Dittrich, U. S. Navy, and a number of private marines has been reported.

During the interregnum between the withdrawal of Spanish authority and the establishment of that of the United States in Guam a number of lepers escaped from sequestration, and have since been kept in concealment by people of the island, ignorant of the dangers so incurred. An isolated settlement, with hospital buildings, mess room, kitchen, chapel, etc., has recently been provided for the unfortunates afflicted with this disease in what is known as the Tumon Bay colony.

Young medical officers entering the service without previous naval training must have some special instruction in the nature of a post-graduate course, to fit them for the specialized duties of the Medical Corps, as well as to equip them in some measure to meet the general responsibilities and obligations resting upon them as officers of the Navy, who may at any time be detailed as members of boards, courts of inquiry, and courts-martial. Such instruction was formerly given at the naval laboratory, New York, but was discontinued at the outbreak of the war with Spain. In considering the question of its reestablishment the advantages of carrying on work of this character in Washington became apparent.

The buildings of the Museum of Hygiene, on the old Naval Observatory reservation, afford accommodations readily adaptable to the purpose, and the system of concentrating board work in Washington makes available from the members of boards a faculty of experience and reputation. Certain special and important instruction may also be more readily provided in this city than elsewhere. Accordingly, by the Department's order of May 27, 1902, the Naval Museum of Hygiene and Medical School was established.

The building occupied as a naval hospital at Washington is reported to be antiquated and insufficient, its quarters cramped, the operating room small and ill adapted to its purposes, and the accommodations for officers insufficient. The establishment of a hospital more commensurate with the needs of the station is recommended, and an estimate for this object has been submitted by the Surgeon-General.

MISCELLANEOUS RECEIPTS.

In accordance with the act of Congress approved August 5, 1882, the usual detailed statement of deposits on account of the sales of Government property, etc., prepared in the office of the Auditor for the Navy Department, will be found in the appendix. This statement

shows that the total amount deposited in the Treasury from November 1, 1901, to October 31, 1902, arising from the sale of condemned naval vessels, stores, materials, nautical books and charts, fuel, clothing, rents of Government property, supplies furnished to other branches of the Government, and from other lawful disposition of public property under the cognizance of the Navy Department, was $281,506.54. Of this sum, $102,199.53 was covered into the Treasury as "Miscellaneous receipts on account of proceeds of public property," as required by section 3618 of the Revised Statutes. The balance, $179,307.01, has been carried, as authorized by law, to the credit of the proper appropriations, to be applied to naval purposes.

This statement shows six deposits that were made in October, 1901, but were not included in the statement of last year because a proper disposition of the money had not then been determined and it had not then been covered into the Treasury.

FINANCIAL STATEMENT.

Appropriations, expenditures, and balances for the fiscal year ending June 30, 1902.

Title of appropriation.	Appropriations for fiscal year 1902, exclusive of public works.	Amounts drawn in fiscal year 1902.	Balances June 30, 1902.
General establishment:			
Pay of the Navy	$15,150,284.00	$10,998,149.95	$4,252,134.05
Pay, miscellaneous	600,000.00	512,786.56	87,213.44
Contingent Navy	10,000.00	6,832.46	3,167.54
Emergency fund, Navy Department	200,000.00	28,554.35	171,445.65
Bureau of Yards and Docks:			
Maintenance	552,000.00	461,568.60	90,431.40
Repairs and preservation, navy-yards	500,000.00	393,595.66	106,404.34
Civil establishment	104,879.08	96,795.17	8,083.91
Contingent	50,000.00	20,543.73	29,456.27
Bureau of Equipment:			
Equipment of vessels	1,950,000.00	1,306,733.37	643,266.63
Contingent	35,000.00	13,901.47	21,098.53
Coal equipment	2,800,000.00	1,632,309.88	1,167,690.12
Civil establishment	29,802,52	25,815.19	3,987.33
Ocean and lake surveys	100,000.00	36,445.59	63,554.41
Naval Observatory	12,000.00	11,031.98	968.02
Bureau of Navigation:			
Pay, Naval Academy	107,815.45	107,600.00	215.45
Heating and lighting, Naval Academy	20,000.00	13,427.82	6,572.18
Special course, Naval Academy	4,500.00	4,500.00	
Contingent, Naval Academy	43,800.00	39,283.60	4,516.40
Naval War College	11,200.00	9,544.56	1,655.44
Naval training station, Rhode Island	45,000.00	44,484.53	515.47
Naval training station, California	30,000.00	25,656.18	4,343.82
Transportation, recruiting, and contingent	180,000.00	114,732.81	65,267.19
Maintenance of colliers	350,000.00	264,893.05	85,106.95
Gunnery exercise	12,000.00	9,837.89	2,162.11
Outfits for naval apprentices	117,000.00		117,000.00
Outfits for landsmen	225,000.00		225,000.00
Naval Home, Philadelphia, Pa	76,425.00	57,793.35	18,631.65

Appropriations, expenditures, and balances for the fiscal year ending June 30, 1902—Con.

Title of appropriation.	Appropriations for fiscal year 1902, exclusive of public works.	Amounts drawn in fiscal year 1902.	Balances June 30, 1902.
Bureau of Ordnance:			
Ordnance and ordnance stores	$1,825,000.00	$910,652.50	$914,347.50
Repairs	40,000.00	35,065.98	4,934.02
Contingent	75,000.00	27,340.08	47,659.92
Civil establishment	36,606.75	35,748.46	858.29
Torpedo station	65,000.00	56,575.37	8,424.63
Arms and equipment, Marine Corps	100,000.00	79,049.04	20,950.96
Bureau of Construction and Repair:			
Construction and repair	7,000,000.00	5,625,743.04	1,374,256.96
Civil establishment	25,824.25	25,676.00	148.25
Bureau of Steam Engineering:			
Steam machinery	3,245,000.00	2,323,977.03	921,022.97
Civil establishment	16,900.00	16,631.79	268.21
Contingent	1,000.00	761.19	238.81
Bureau of Supplies and Accounts			
Provisions, Navy	3,250,000.00	2,437,460.36	812,539.64
Contingent	200,000.00	99,664.19	100,335.81
Civil establishment	93,849.28	76,300.81	17,548.47
Bureau of Medicine and Surgery:			
Medical department	125,000.00	118,573.95	6,426.05
Repairs	30,000.00	14,413.27	15,586.73
Contingent	35,000.00	33,039.38	1,960.62
Naval Hospital fund	40,000.00	40,000.00	----------
Marine Corps:			
Pay	1,706,504.23	1,368,881.34	337,622.89
Clothing	290,199.54	266,226.31	23,973.23
Provisions	371,071.50	193,763.77	177,307.73
Fuel	30,000.00	29,510.78	489.22
Repairs of barracks	29,000.00	23,570.90	5,429.10
Military stores	46,297.00	29,303.80	16,993.20
Transportation and recruiting	70,000.00	35,675.69	34,324.31
Forage	6,000.00	2,720.33	3,279.67
Hire of quarters	18,548.00	17,477.29	1,070.71
Contingent	96,389.39	76,549.35	19,840.04
	42,184,895.99	30,137,169.75	12,047,726.24

THE PROBATIONARY SYSTEM.

During the past year the probationary system, as applied to naval prisoners, has been given a trial in cases where a man's general record, aside from the particular offense or offenses for which he has undergone trial, has presented meritorious features, the practice has been to direct that the sentence imposed, in whole or in part, be held in abeyance and the prisoner restored to duty on probation, full reports respecting his conduct during the term of such probation being made. The practical operation of this plan has proved satisfactory, and it will be continued.

LEGISLATION RECOMMENDED.

Section 3648 of the Revised Statutes forbids the "advance of public money" in any case whatever. The Comptroller of the Treasury and the Paymaster-General of the Navy unite in urging such modification of this provision of law as will permit advance payments to be made in cases where required by commercial usage. It has been found in practice that the statute as it stands sometimes interposes a bar to the prompt procurement by the Government of certain services, such as expressage, the furnishing of light and water for public buildings, telephone service, and subscriptions to daily, weekly, and monthly publications. Persons furnishing these things frequently decline to supply them to the Government on a different basis from that on which they are obtained by their individual patrons. It is urged that "the Government should accommodate itself and its laws to the business laws and usages of trade when it enters the field of trade." Believing that the modification of existing law necessary to avoid the practical inconveniences complained of could be safely made, the Department concurs in the recommendation that Congress be asked to amend section 3648 as suggested.

Among the recommendations of the Judge-Advocate-General which receive the approval of the Department are:

1. The enactment of a measure providing for the use of depositions before naval courts-martial and courts of inquiry. A bill conferring such authority (S. 1103) passed the Senate on the 3d of March last.

2. The simplification of the procedure of naval examining and retiring boards by consolidating their functions, as proposed in meas ures now pending in the Senate (S. 64) and in the House of Representatives (H. R. 8120). The proposed change, the several features of which have been suggested by the operation of the present systems of examination and retirement in the Army and the Navy, respectively, would result in material advantage to the service.

3. The passage of a measure making provision for convening general courts-martial in the island possessions of the United States. The need for this legislation is the outgrowth of new conditions arising since 1898. A measure (S. 1102) authorizing the President to empower commanding officers of naval stations in the island possessions of the United States to convene general courts-martial was introduced in the Senate and passed by that body on the 3d of March last.

THE MARINE CORPS.

I take pleasure in making reference to the prompt response of the Marine Corps on more than one occasion during the year to urgent demands of the service. In one instance, upon telegraphic instructions,

a battalion, fully organized, armed, and equipped with supplies of all kinds, including arms, ammunition, rations, tents, camp equipage, implements, etc., was assembled at League Island, Pa., ready for embarkation within seventy-two hours after the receipt at headquarters of the order, and twenty-four hours before the expiration of the time fixed therein. This is in keeping with the traditional readiness of the organization to answer at the shortest notice calls made upon it for active duty.

TUTUILA AND GUAM.

Since the acquisition of these islands no action has been taken by Congress to establish civil government within their limits or to provide revenues for its maintenance. Such action is necessary to the peace and well-being of the islands, and is earnestly recommended.

I can not close this report without acknowledging the sympathy, cooperation, and aid which I have received from the Admiral of the Navy. As president of the General Board of the Navy his services have been of great value to the Department and the fleet. The security of his own fame has not lessened his interest in the service or diminished his effort for its improvement. His zealous earnestness in the cause is the good fortune of the Department, and gives him an added title to the favor of the nation.

WILLIAM H. MOODY,
Secretary of the Navy.

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PAPERS

ACCOMPANYING

THE REPORT OF THE SECRETARY OF THE NAVY.

REPORT OF CHIEF OF BUREAU OF YARDS AND DOCKS.

DEPARTMENT OF THE NAVY,
BUREAU OF YARDS AND DOCKS,
Washington, D. C., November 1, 1902.

SIR: In obedience to the orders contained in the Department's letter of July 3, 1902, I have the honor to submit a report of the operations of the Bureau of Yards and Docks for the fiscal year ended June 30, 1902, accompanied by estimates for its work for the fiscal year ending June 30, 1904.

The expenditures during the year aggregate $5,634,638.10, of which $4,359,367.39 was for works of improvement for which specific appropriation was made by Congress. The remainder, $1,275,270.71, was applied to the maintenance and repair of the navy-yards and stations, for the civil establishment, contingencies, etc., as follows:

The repairs and preservation of the yards and stations cost $552,823.93; their maintenance, covering outlays for and upon personal property, pay of watchmen, water taxes, etc., cost $574,345.19; the civil establishment cost $97,245.67; and contingent and other expenses amounted to $50,855.92.

Various balances of appropriations remaining after the completion of public works, etc., aggregating $23,714.12, have been turned into the surplus fund of the Treasury.

The expenditures for improvements were of a varied character, extending to the construction of the five dry docks for the navy-yards at Portsmouth, Boston, League Island, and Mare Island, and the naval station at New Orleans, and to the erection of a large number of shops of modern design and fireproof construction, adapted to the uses of the several bureaus.

Extensive improvements have also been effected in increasing the railroad facilities for the transportation of material and supplies within the yards, the water, electric, and sewerage systems, laying pavements, and erecting quay walls, piers, dredging, and in many other respects. These improvements are greatly enlarging the capacities of the yards and stations and putting them in better condition to meet the needs of the naval service in times of emergency.

These remarks apply especially to the home yards at Portsmouth, Boston, Brooklyn, Norfolk, Mare Island, League Island, and Puget Sound. The stations in the insular possessions have received comparatively moderate outlays, such as were absolutely necessary to keep the works in repair. Few improvements or betterments were undertaken except at Cavite, where the demands resulting from the presence of the large and active force of the Asiatic Station taxed the shore establishment very heavily. The stations in these possessions are not adequate and it would be wise to add to the equipment.

The progress upon the dry docks has not been satisfactory in a single instance. Some special causes have operated which could not be very well avoided, but even where these did not exist the advance in the work has been slow and in some instances exceedingly dilatory. The steel floating dry dock for the naval station at New Orleans has been entirely completed, towed to its destination from Sparrows Point, Md., where built, and subjected to the tests required by the contract by the docking of the battle ship *Illinois*. The dock was accepted and is now in regular use, forming an exceedingly valuable addition to the docking facilities upon this coast, it being one of the two dry docks completed which are capable of docking the largest battle ships.

The steel floating dry dock formerly belonging to the Spanish Government, and acquired by this Government by purchase, was so far repaired and improved at a large expense as to be about ready for use when it met an untoward accident whilst the end pontoons were being docked, the dock breaking badly from the weight of these pontoons being lifted at either end. It is to be towed to the Pensacola Navy Yard by the Bureau of Construction and Repair, where it will be repaired. The total expenditures in connection with this dock, including its purchase and repair, have up to the present amounted to $240,557.

The progress upon other works of improvement has not been satisfactory in all instances. Contract work especially is embarrassed by difficulty in procuring some classes of materials and of labor. Supplies are also very tardy in delivery. The congestion in the whole business field of the country affects in a considerable measure the work of the Navy.

Further progress has been made in the installation or enlargement of power plants for the purposes of the Bureau at the most important navy-yards, notably at Portsmouth and Norfolk. The duty upon these plants is increasing constantly, due to the improvement of the yards and the greater activity in all the operations relating to the repairs and supplies for vessels.

Much progress has been made toward providing better and additional berthing accommodations for vessels seeking the yards for repairs and outfit. A marked advantage is realized in this respect at the Boston yard, the acquirement of a large tract of land under water from the State of Massachusetts, which was without cost, having enabled the Bureau to project and construct piers extending outward from the original wharf line over these lands, greatly increasing the number of vessels possible to be brought to the wharves and thereby increasing the amount of work that can be handled at that yard. In the same line is the deep-water basin under construction at Norfolk and which will soon be available in part. Important additional berths are also being made at Mare Island, Cal., and Puget Sound, Wash.

Nearly all the yards have undergone very material and important improvement in the effort to keep pace with the constantly increasing tax upon them growing out of the number of vessels being put afloat.

The Cavite station has continued to perform most important duty in the maintenance of the efficiency of the force upon the Asiatic Station, despite the many drawbacks to its best service. The yard is illy equipped, considering the fact that it is the only one in the Philippines of any importance. Under the emergencies of the service there the greatest efforts have been made to improve conditions, in the absence of any specific appropriations therefor, by the erection of new build-

ings to shelter tools and workmen, repairing and modifying old ones poorly adapted to the work, using from the emergency appropriations, and latterly from the Bureau's repair and maintenance funds. Too much praise can not be accorded to the commandant of the yard, Captain Hanford, for his zeal, untiring efforts, and wise judgment in all matters going to the use of the means at hand and placed at his disposal for the work required of the yard.

The value of the services rendered by this station, and which it must supply for a few years without any doubt, warrants the liberal consideration of the Department and Congress. It will always be a station of importance, and the comparatively moderate sums necessary to make it efficient for the work it now does should be granted. The question of the establishment of another navy-yard of the first magnitude in the vicinity, about 60 miles away, ought not to operate to defeat the supply of these features now requisite. The water supply, fire protection, repairs to wharves, dredging, constructing a few modern buildings, adequate power plant, and quarters sufficient and fit for officers and their families in service there are needed very much indeed. Its geographical position, lying in the port of Manila, will, in all likelihood, lead to its retention.

The losses from fire have been very small during the year, showing a marked exemption as compared with some recent years. A number of incipient fires have occurred, but were discovered and extinguished so promptly as to involve insignificant loss.

Embarrassment has been experienced in conducting the Bureau's work, due to lack of civil engineer officers and draftsmen. A small increase in the former was authorized at the last session of Congress, and when the additional members are obtained the difficulty will be in some measure relieved. With respect to the drafting force, however, it has been impossible to secure the services of a sufficient number of proper qualifications, and much delay occurs in the preparation of plans and specifications for new works, which is further aggravated by the long time consumed in the necessary printing. The public printing is done under great stress as to quantity and time, and as the law does not permit of its being done by private establishments the work must wait. It would be greatly to the advantage of this Bureau if the printing of its specifications for public works could be done by private printers. The beginning of important works is delayed from a few weeks to three months in consequence of the present system.

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NAVAL STATION, SAN JUAN, P. R.

The expenditures of labor and material during the fiscal year were as follows:

Yard improvements	$17,659.74
Repairs and preservation	12,742.07
Maintenance	11,803.33
Civil establishment	1,104.00
Total	43,309.14

YARD IMPROVEMENTS.

Pier, act of June 7, 1900.—This pier was entirely completed May 31, 1902. The expenditures for the year were $10,410.04, making the total cost to completion $14,746.92.

Coaling facilities, acts of June 7, 1900, and March 3, 1901.—Under this appropriation a 100-horsepower boiler was purchased and installed and plans made for a pier. This work would have been further advanced had its location not been delayed awaiting the probable addition of lands to the station. The expenditure for the year was $2,684.64. The total expenditures have been $2,712.

Dredging, act of June 7, 1900.—The actual work of dredging was not begun until the last week of the fiscal year, owing to necessary repairs to the dredging machinery. Coal has been purchased, and the work is now well under way and will be continued to completion. The expenditures under this appropriation have been $432.95.

Electric-light plant, act of June 7, 1900.—At the beginning of the year two generating sets and some supplies had been delivered and some wiring done. During the year the generating sets and switch board were installed and incidental work in connection therewith completed. Expenditures for the year were $781.86. The total expenditures to date have been $4,758.10.

Since the close of the fiscal year possession has been taken of lands immediately adjacent to the naval station for coaling-station purposes, under Executive order of August 20, 1901. Other lands upon the peninsula have been transferred by the War Department.

A question has arisen in regard to whether the title to certain of the lands is in the United States or the insular government, and the use of the same is in consequence in abeyance.

NAVAL STATION, HONOLULU, HAWAII.

The expenditures of labor and material during the fiscal year were as follows:

Yard improvements	$16,210.47
Repairs and preservation	809.06
Maintenance	5,649.98
Civil establishment	556.00
Contingent	1,902.90
Total	25,128.41

YARD IMPROVEMENTS.

The station at Honolulu has received a few improvements in its condition by the extension of the office building, the construction of a watchmen's quarters, a small pipe system for the distribution of water from the artesian well upon the property, and for grading, paving, and fencing. This small station performs an important office, and many requisites for a call station for vessels exist, but these are deferred awaiting their establishment at Pearl Harbor, so much better adapted in its harbor and site for the station which must be, sooner or later, erected in Hawaii.

An expenditure was made in the way of conducting surveys, borings, and the examinations at Pearl Harbor, preliminary to its improvement.

Extending office building.—Contract for this work was made in October, 1901, and the entire work of improvement completed during the fiscal year. The total cost of the work was $2,999.55.

Watchmen's cottage.—An appropriation of $2,509 was made for this improvement. Contract was made, and a six-room cottage erected at a cost of $2,037. Subsequently this cottage was assigned to the

carpenter on duty at the station, and a small cottage for the use of the watchman was erected and paid for from the remainder of the appropriation. The total expenditure was $2,491.07.

Water-pipe system.—The water system of the station was extended and several small improvements made. The expenditure amounted to $996.87.

Grading and fencing, appropriation $10,000.—The fencing of the station has been practically completed, the grading entirely finished and almost entirely sodded. Curbstones have been set, all streets macadamized, and a quantity of concrete walks and sidewalks put down. The total expenditures have been $7,685.98.

NAVAL STATION, TUTUILA, SAMOAN ISLANDS.

The expenditures of labor and material during the fiscal year were as follows:

Yard improvements	$9,646.69
Repairs and preservation	6,941.48
Maintenance	6,549.74
Emergency fund	4,178.32
Total	27,316.23

YARD IMPROVEMENTS.

Coal sheds, wharf, and general storekeeper's storehouse, acts of August 5, 1892, and March 3, 1899.—This work was completed in February, 1902, at a total expenditure of $282,261.45. The wharf was practically built twice, the first effort having to be abandoned owing to the character of the bottom. The sheds have a capacity for 4,000 tons of coal. The wharf is 278 feet long and 48 feet wide and has a depth of 30 feet of water alongside.

Grading, act of March 3, 1901.—Grading under this appropriation has been carried on during the year, and consisted principally of reclaiming land to the west of Swimming Point Hill, filling a swamp, and building drains. The expenditures have amounted to $9,335.19.

Coal-storage extension, act of March 3, 1901.—No work has been done under this appropriation, excepting that on plans, for which $152.36 has been expended.

Commandant's residence, "Emergency fund, Navy Department, 1901," $15,000.—No work has yet been done on this building, although some of the material has been delivered on the station. Surveys for the site are being made.

NAVAL STATION, GUAM.

Expenditures, 1902.

Repairs and preservation	$12,258.86
Maintenance	24,934.29
Total	37,193.15

The repairs at this station have cost $12,258.86, the expenditure being chiefly upon the yard buildings, lighters and boats, water supplys and miscellaneous objects. The Government house, an administration building, the warehouse, ice-plant building, ice plant, sawmill, boiler house, coal sheds, and other buildings, making a total of 16, were kept in the best condition the funds would allow of. Hauling-out ways were

constructed at Piti, of native timber, and serve an important service for small station crafts. The waterworks have been improved, and a cistern constructed so as to afford fresh water for the power plant when in sufficient quantity and to dilute the river water used at other times.

The maintenance of the station has cost this bureau $24,934.29 for the various incidental needs, principally for freight and transportation, machinery and tools, teams, attendance on power plant and ice plant, fuel, and incidental expenses not chargeable to other appropriations.

The skilled employees are sent out from the United States on two years' agreement, and their pay must be continuous. Therefore their services can not be temporarily dispensed with, as in the case of native or resident labor. It is possible to utilize these skilled men upon work for the insular government upon some occasions when the station work is slack, and in this manner offset to some extent the disadvantages in expense arising from the necessary system.

The annual report of operations under this bureau received from the station contains an outline sketch of some of the principal steps, local and incident, in the establishment of the station, which is thought worthy of being here recorded and is as follows:

On August 7, 1899, the U. S. S. *Yosemite*, with Capt. R. P. Leary, U. S. Navy, governor, and two companies of marines under Maj. H. C. Kelton, U. S. M. C., arrived at the harbor of San Luis d'Apra, Guam.

Prior to the arrival of the *Yosemite* the United States was represented in Guam by Lieut. L. A. Kaiser, U. S. Navy, who made his headquarters on board the U. S. S. *Nanshan*, then in port.

On August 10 a detail of officers from the *Yosemite* was made for the purpose of making a survey of the harbor of San Luis d'Apra. Work was begun immediately and the survey completed about February 1, 1900. In the course of this work a frame observatory was built and equipped on the old Spanish fort Santa Cruz, situated on a small island in the head of the bay. At the observatory, tide gauges masonry foundations for transit instrument, tripod, and hydrographic signals were erected. By repeated observations and chronometer checks from Yokohama this point was accurately located.

Immediately on his arrival Governor Leary read his proclamation and took charge as governor of the island. He had all Government buildings at Agana examined, and found them unfit for occupation, and the city itself unhealthy on account of the entire absence or long neglect of sanitary arrangements and the general filthy habits of the inhabitants.

A guard of marines were sent ashore to Piti and Agana to receive and care for stores and material landed from the *Yosemite*. These men lived in tents.

On August 31 Company A of the Guam battalion of marines was landed and sent to Agana to prepare the government house for occupancy and to fit up quarters for the battalion. These men also lived in tents.

On September 11 Company B was sent to Agana. Work was commenced on the same day on an evaporating plant for the distillation of drinking water. The water used by Americans prior to the completion of this plant was distilled water from the *Yosemite*, sent ashore in casks. The distilling plant was composed of seven launch boilers supplying steam to a ship evaporator; river water was used for circulating water for condenser.

During August and September a pipe line was laid from the distilling plant to the government house and work began on a sewerage system, flushing water for which was furnished by pumping river water through a separate line of pipe, using for power an undershot wheel, a small dam being built to furnish the necessary head.

By order of the governor, heads of departments on board the *Yosemite* were placed in charge of the corresponding departments of the naval station, making four departments—equipment, construction and repair, medicine and surgery, and steam engineering.

On November 26 Governor Leary transferred his headquarters from the *Yosemite* to the government house, at Agana.

On November 27 mechanics from ship were sent on shore to perform duty at the naval station.

On December 9 the erection of a sawmill at Agana was begun and soon after completed; the mill was kept busy, as there was no American lumber on the island, and logs of native hard wood had to be sawed and used for building purposes.

An epidemic of typhoid fever broke out at about this time, some five or six deaths occurring in rapid succession. Nearly one-half the command was on the sick list from November to February.

On February 27 a preliminary topographic survey of the island was commenced, but had to be abandoned on March 25 on account of detachment of one of the two officers available for the duty.

The status of the station at this time was about as follows: A one-story concrete building had been erected and in it installed seven launch boilers with pumps and connections. A timber tower 20 feet high was erected and a tank of 10,000 gallons capacity placed in position; about 1,000 feet of 2-inch pipe lead from the distributing tank to the hydrant in front of the government house. Officers and men were given an allowance of distilled water, which was drawn at stated intervals from this hydrant. About 1,500 feet of sewer pipe was laid from such material as was at hand, the flushing water furnished from the river through a separate line of 2-inch pipe.

Most of the officers attached to the station filled civil positions in addition to their regular naval station duties. The governor's aid was judge of court of first instance, the commanding officer of marines was chief of public works, and the senior medical officer was health officer of the island.

Only three departments had been created: Steam engineering, in charge of the distilling plant, water and sewer systems; supplies and accounts (but no general storekeeper), and medicine and surgery. The hospital was established in a rented building near the plaza.

On July 20, 1900, Governor Leary was relieved by Commandant Seaton Schroeder, U. S. Navy, who arrived on the station on July 7.

On July 24 work was commenced on the installation of an ice and refrigerating plant, in a building rented for the purpose. Heavy concrete foundations were laid for the machinery and boiler, machinery erected, piping and connections completed, tanks, cans, brine tanks, and cold-storage room arranged.

Work was also done at this time in relaying pipes, extending sewers, etc.

On October 3, 1900, the ice plant was completed and first issue of ice made.

November 5, 1900, the department of yards and docks was created. Ensign H. L. Collins, U. S. Navy, being appointed head of department.

The ice plant, distilling plant, water and sewer systems were turned over to this department, and in the absence of a general storekeeper stores of all kinds were in its charge, returns being made direct to the Bureau of Supplies and Accounts. Inasmuch as the labor employed at this time was largely furnished by enlisted men of the station, the line between island and naval station work was not definitely drawn, as a result of which condition the chief of public works and the head of department of yards and docks worked together on such public works, naval or island, as it was deemed necessary to carry on. Ship returns only were made, and no efforts made to install regular navy-yard system of accounting until such a time as a general storekeeper might be appointed.

On November 13, 1900, the island was visited by a severe typhoon which greatly damaged or destroyed all naval-station property, among the most important of which might be mentioned the observatory on Fort Santa Cruz, destroyed; saw mill at Agana, destroyed; the Government house and all other buildings owned or occupied by the naval station, unroofed and otherwise injured.

For about a year after this event the principal work done on the station was in the nature of repairs and rebuilding made necessary by the typhoon.

On January 25 an army detachment with Filipino prisoners arrived and made their camp on a piece of property owned by the island near Asan. Barracks, officers' quarters, commissary, prisoners' quarters, stables, etc., were built, and the name of presidio of Asan taken.

The pay officer of the station was appointed general storekeeper in April, 1901, and on June 7 all general stores were turned over and that department regularly started. Regular navy-yard methods were installed after a consignment of proper books and blanks reached the station.

In May, 1902, a department of construction and repair was created.

In June a department of equipment was created, that department and department of steam engineering being placed under the same head.

On July 1, 1901, the head of department of yards and docks relieved the commanding officer of marines as chief of public works of the island.

NAVAL STATION, CAVITE, P. I.

The expenditures of labor and material during the fiscal year were as follows:

Repairs and preservation	$76,978.27
Maintenance	30,141.00
Civil establishment	973.33
Contingent	120.75
Emergency fund	24,939.89
Total	133,153.24

YARD IMPROVEMENTS.

Permanent mooring buoy for flagship of southern squadron, allotment $6,595, January 6, 1902, from "Emergency fund, 1902."— Work was

begun on this item in April, 1902, and completed in the same month. A telephone cable was supplied and laid by the Army, thus effecting an efficient telephone line of great convenience in communicating with the flagship. The amount expended under the allotment was $5,435.62.

Disinfecting building (emergency fund, 1902), allotment March 28 1902, $500.—This work was constructed during April and May, 1902, the material being stone drawn from unused casements of the old fortification. The cost was only $394.31.

Roofing in space between buildings 6 and 7 (emergency fund, 1901, and repairs and preservation, 1902), January 30, 1901, $3,200.—This work was authorized to provide a shop in which boilers and engines might be repaired. The work was completed in September, 1901, at a total expenditure of $3,202.52, the expenditures for the fiscal year being $1,126.87.

Steam engineering boiler shed, building No. 30.—This building was authorized and begun during the last fiscal year under an allotment from the emergency fund, 1900–1901. This allotment was insufficient for the purchase of the material alone, and little work was done. Work was resumed in November, 1901, and the building completed in March, 1902, under repairs, 1902, when it was at once put into service. The total cost of the work has been $10,697.37.

Yards and docks blacksmith shop, building No. 31.—This building was erected under allotments from repairs, 1901 and 1902. The work was very necessary, as the Department had no place where blacksmithing and similar work could be done. The building was completed in September, 1901, at a total cost of $460.01.

Construction and repair shed and sawmill, building No. 27.—The erection of this building was undertaken by the department of construction and repair in the last fiscal year, and has progressed continuously, although with considerable delay, principally on account of not enough funds being available. This work has been performed under allotments from emergency funds, 1901–2, and expenditures to date have been $13,608.48. Considerable work yet remains to be done.

Construction and repair ship-fitters' and smiths' shop, building No. 29.—This building was authorized under emergency fund, 1902, and allotments made therefor. The work of construction began in February, 1902, and continued through the remainder of the fiscal year, the cost to date aggregating $10,752.48. Work is now suspended awaiting available funds.

Equipment building No. 38.—Contract for this work was made with B. M. Cadwallader & Co., of Manila, June 5, 1902, for the sum of $28,987, under an allotment of $30,000 from the emergency fund, 1902. Work on the foundations has begun and was progressing favorably at the close of the fiscal year.

Several other works of improvement were either begun or completed during the fiscal year under allotments from the emergency fund, and while the expenditures therefor are considerable in the aggregate, they are not worthy of detailed statement.

NAVAL STATION, POLLOC, P. I.

The expenditures at this station, under this Bureau, have been very small, and were limited to very moderate repairs to the small dry dock, including a new pumping apparatus for draining the dock and

for use as a fire pump, and installing a small and inexpensive repair shop by the side of the dry dock. These outlays were provided for by the allotment of a small amount from the emergency fund, Navy Department, 1901–2. A further allotment from the same fund was made by Executive order for repairing damages to the barracks and hospital building occasioned by a cyclone of April 22, 1901.

The station is chiefly a marine post, and the garrison and its officers occupy practically all the buildings. Very little use is being made of it as a station at the present time, but in the event of hostilities in that section of the islands it would be an invaluable base.

NAVAL STATION, OLONGAPO, P. I.

Expenditures, 1902.

Emergency fund $7,233.88

Very little has has been done at this station. A few minor expenditures were made upon the yard shears.

An allotment from the emergency fund, 1901, was made by the Department August 2, 1900, for the purpose of conducting surveys and examinations of the island of Guimaras, P. I., with the view of establishing a naval base and station thereon; and on October 29, 1900, it was extended by the President to cover the expenses of a commission to inspect various locations in the Philippine Islands with a view of selecting the most suitable site for a naval station, and an additional allotment of $10,000 from the emergency fund, 1902, one-half of the prior allotment having lapsed into the Treasury. The investigations were carried on until the end of the fiscal year, June 30, 1902, when the balance of the fund reverted to the Treasury, and surveys were suspended. It is desirable that the surveys be continued to completion, and an appropriation of $10,000 for the object is recommended. The location of the principal naval station in the Philippines is a very important matter, and full and exhaustive surveys and study should be given the subject.

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Very respectfully,

MORDECAI T. ENDICOTT,
Chief of Bureau.

The SECRETARY OF THE NAVY.

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REPORT OF CHIEF OF THE BUREAU OF EQUIPMENT.

WASHINGTON, D. C., *October 1, 1902.*

SIR: I have the honor to submit a report of the operations of the Bureau of Equipment for the fiscal year ending June 30, 1902, with the annual estimates for funds for the service of the fiscal year ending June 30, 1904.

The appropriations under the cognizance of the Bureau and its various branches available for use during the fiscal year were as follows, viz:

Naval act, approved March 3, 1901.

Coal, equipment	$2,000,000.00
Equipment of vessels	1,500,000.00
Depots for coal	750,000.00
Increase of the Navy, equipment	400,000.00
Ocean and lake surveys	100,000.00
Contingent equipment	35,000.00
Civil establishment	29,802.52
Naval Observatory, grounds and roads	10,000.00
Naval Observatory, purchase of land	149,571.08
Naval Observatory, Board of Visitors	2,000.00
Total	4,976,373.60

Urgent deficiency act, approved February 14, 1902.

Coal, equipment	$800,000.00
Equipment of vessels	450,000.00
Total	1,250,000.00

Legislative, executive, and judicial act, approved March 3, 1901.

Salaries, Bureau of Equipment	$12,640.00
Salaries, Naval Observatory	38,140.00
Contingent and miscellaneous expenses, Naval Observatory	16,750.00
Salaries, Nautical Almanac Office	22,900.00
Salaries, Hydrographic Office	100,858.00
Contingent and miscellaneous expenses, Hydrographic Office	39,100.00
Pilot charts, North Pacific Ocean	2,000.00
Total	232,388.00

SUMMARY.

Coal, equipment	$2,800,000.00
Equipment of vessels	1,950,000.00
Depots for coal	750,000.00
Increase of the Navy, equipment	400,000.00
Ocean and lake surveys	100,000.00
Contingent equipment	35,000.00
Civil establishment	29,802.52
Naval Observatory	161,571.08
Salaries, Bureau of Equipment	12,640.00
Salaries, Naval Observatory	38,140.00
Contingent and miscellaneous expenses, Naval Observatory	16,750.00
Salaries, Nautical Almanac Office	22,900.00
Salaries, Hydrographic Office	100,858.00
Contingent and miscellaneous expenses, Hydrographic Office	39,100.00
Pilot charts, North Pacific Ocean	2,000.00
Total	6,458,761.60

These appropriations were adequate for the needs of the service during the year, although, as stated, in the case of the appropriations "coal, equipment," and "equipment of vessels," an additional amount over that originally estimated for had to be provided, which was supplied in the urgent deficiency act, quoted above.

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WIRELESS TELEGRAPHY.

The Bureau has, in its annual reports since the advent of wireless telegraphy, kept the Department advised briefly of the progress of this new method of transmitting signals from distant points.

In accordance with the wishes of the Department, no active steps were taken with a view of investigating the merits of any particular design of wireless-telegraph apparatus until about one year ago. In October, 1901, Commander F. M. Barber, U. S. Navy (retired), residing in Paris, was, at the request of the Bureau, especially detailed for duty in connection with the investigation of this subject on the Continent of Europe, where wireless-telegraph appliances have been chiefly developed. Since this date Commander Barber has made numerous valuable reports containing a great amount of information on this matter. He is constantly advising the Bureau of the latest developments and inventions.

Very great attention is being paid by foreign navies to this method of signaling. Changes are constantly being made, and the literature on wireless telegraphy has become extensive. Nearly every book on the subject, however, is out of date by the time it is printed.

There are four systems that have been developed in Europe which, after investigation, appeared promising, viz, the Slaby-Arco and Braun-Siemens-Halske, manufactured in Berlin, and the Rochefort and Ducretet, manufactured in Paris. The Bureau has purchased two sets of each, also certain appliances from other makers which appeared worthy of investigation.

When these outfits were ready for delivery, at the request of the Bureau, Lieut. J. M. Hudgins, U. S. Navy, and Chief Electricians James H. Bell and William C. Bean were directed by the Department to proceed to Paris and report to Commander Barber for instruction in the proper methods of operating all of these appliances. The knowledge and experience gained by Lieutenant Hudgins and Chief Electricians Bell and Bean have been of great value in installing the apparatus for testing purposes and instructing navy signalmen in its use, care, and maintenance.

It is the intention of the Bureau to test these different kinds of wireless-telegraph apparatus in competition. For this purpose a station has been prepared at the navy-yard, Washington, D. C., and another at Annapolis, Md. The distance between these stations is about 30 miles. Upon the completion of tests entirely overland, it is proposed to install one set of each kind of apparatus on board of a ship and the other set at Annapolis, Md., in order to conduct tests from ship to shore at varying distances. The next step will be to install one set of each apparatus on board of a ship, each ship proceeding to sea for tests at varying distances and outside of any possible land interference. These tests are in progress at the present time by a board of five officers, but it is too early to predict what the result will be.

It is proposed to test other systems of wireless telegraph apparatus in addition to those mentioned, if satisfactory arrangements can be made for their acquisition, should the Department so desire after the tests are completed. The Bureau has made arrangements for obtaining a duplicate set from the De Forest Wireless Telegraph Company.

In this connection, the Bureau regrets that it has been unable to reach any satisfactory arrangement with the Marconi Wireless Telegraph Company for the purchase of its appliances, should it be desired, after testing the same. The company has offered a duplicate set for test, to be returned after the trials have been completed. This company requires, however, the payment of a given sum for each set upon delivery and a royalty for each year during the life of the patents. The aggregate cost of a set under such an agreement would be very great. In addition, it is illegal to obligate the payment of money beyond a single fiscal year. The Bureau regrets that it has been unable to reach a satisfactory basis for the possible acquisition of appliances which have such a good reputation as those of the Marconi Wireless Telegraph Company.

It is further proposed to establish wireless-telegraph stations for the purpose of instructing officers and men at such stations as Newport, R. I., New York, N. Y., San Francisco, Cal., and possibly other naval stations. In order to ascertain the effect of heat, which is said to be injurious to the successful working of wireless apparatus, a station will be established at Key West, Fla.

Most naval powers are far in advance of the United States in the installation of wireless-telegraph appliances on board of naval ships. It is the opinion of the Bureau, however, that thus far no ground has been lost by reason of the conservative progress of this country in adopting some particular system and supplying it to vessels of the Navy. The latter are being prepared, so far as the necessary changes in their masts are concerned, as opportunity offers, and many are ready for the installation of the apparatus, whenever supplied. This may be done without the appliances of a dockyard.

The Bureau desires to invite the attention of the Department to the paucity of officers now on duty in connection with the subject of wireless telegraphy. In foreign navies commissions of distinguished officers are engaged solely on this important service.

In France a commission of five naval officers, headed by a captain, with the addition of an army officer, a member of the engineer corps, and the greatest expert in wireless telegraphy in France, is constantly engaged on the subject. This commission is assisted by two boards of naval officers, each composed of five members.

In England, Germany, Austria, and Russia, the subject is in the hands of a number of officers especially selected on account of their fitness for the duty.

In Japan a commission composed of one captain, one officer electrician (ranking with lieutenant-commander), two lieutenants, and two mechanical engineers has the matter in charge. The Japanese experimental stations are at Tokyo and Yokosuka; in addition, there are masts for wireless apparatus at all navy-yards. This commission seems particularly well adapted for the duty, including representatives from the seaman, electrical, and engineering branches. It is probable that some of the members are practically on permanent detail.

There is no navy, so far as the Bureau is aware, which has not given especial attention to this subject.

At the time that Commander Barber was detailed for duty in Europe, already mentioned, Lieut. A. M. Beecher, U. S. Navy, was selected by the Department for investigation of the subject in this country. Owing to his numerous duties in this Bureau he can not give the sub-

ject very much attention, and his efforts are chiefly confined to attending to the correspondence of the Bureau on this particular branch. Lieut. J. M. Hudgins, U. S. Navy, is devoting most of his time to this duty, although attached to the Bureau for other work. These three officers are all who have thus far made a study of wireless telegraphy and, in the opinion of the Bureau, are insufficient.

In view of the great importance of wireless telegraphy as a means of communication between ships at sea and between ships and shore stations, and in consideration of the greatly increased value of such communication in time of war, the attention of the Department is invited to certain facts in connection with this subject, which, in the opinion of the Bureau, require action on the part of the Government.

It appears to be well established that the operation of any wireless transmitting apparatus will affect any wireless receiving apparatus within a certain distance, which distance may be considered as its radius of influence. As a direct consequence thereof the signals which may be sent by other wireless transmitters within this radius of influence will be more or less obscured at all receiving stations within the same circuit; in other words, when the transmission of wireless messages is attempted by two or more operating stations at the same time, their interference will probably prevent the reception of a legible message at any receiving station. It is claimed by certain inventors that this interference can be overcome, but these claims do not appear to be substantiated, and it is therefore possible at present for any operator controlling a powerful transmitting apparatus to prevent the reception of a message within its radius of influence.

In consideration of these facts it therefore becomes important, in the opinion of the Bureau, that all wireless transmitting and receiving stations should be brought under the control of the Government. It also appears important that this should be done before the vested interests in connection therewith have become too great. The Bureau has especially in mind a large wireless station recently established by a foreign company on Cape Cod.

The Bureau is officially informed that foreign governments are exercising careful supervision over the location of wireless stations within their respective territorial limits with a view of having at all times absolute control thereof. In time of war the Department will undoubtedly find it necessary to communicate by means of wireless telegraphy with certain receiving stations along the coast. Nothing should be permitted to interfere with the transmission of such messages, nor should it be possible for unauthorized persons to receive them.

The only practical method of insuring this result is to secure Government control over all wireless-telegraph stations along the coast. It is suggested that legislation to this end be requested.

COMPASS OFFICE.

Lieut. Commander W. S. Schuetze, U. S. Navy, served as superintendent of compasses from the beginning of the fiscal year until his death, April 4, 1902. Lieutenant-Commander Schuetze had previously been in charge of the compass office and done much to perfect compasses and their appliances. He was an accomplished officer, and his death is a serious loss to the naval service.

Lieutenant-Commander Schuetze was succeeded as superintendent by Lieut. Commander C. J. Badger, U. S. Navy. Ensign W. L. Varnum, U. S. Navy (retired), continues as assistant to the superintendent.

The work of the compass office has been so fully described and its importance dwelt upon in former annual reports of the Bureau that no extended reference to it seems to be necessary at present.

The estimated expenditures for compass appliances for the next fiscal year are $33,293.

Only 9 officers have been ordered to the compass office for instruction during the past year, as against 23 officers during the preceding year. The great advantage of a course of instruction in the compass office, however, is so well understood that many officers on duty in Washington have volunteered for instruction and taken a partial course from time to time as their other duties permitted.

As in past years, new instruments for measuring the speed of ships, for sounding, and for other purposes in connection with the safe navigation of ships have been examined, reported upon, and, when possible, tested by the superintendent.

Reference is made to the last two annual reports of the Bureau, containing descriptions and illustrations of proposed new forms of compass cards.

Discussion on these types of cards was invited, and the Bureau is now in possession of opinions on the proposed new methods from many naval officers, some of whom are hydrographers of international reputation. While a large number are in favor of an immediate change, the general opinion of practical seamen appears to be in opposition to any radical departure from the present method of marking compass cards in points and in 90° divisions.

OFFICERS ON DUTY UNDER THE BUREAU.

The following-named officers are now attached to the Bureau for duty; the total number is 48. The Bureau desires to commend them for the efficient performance of their duties.

BUREAU OF EQUIPMENT.

Commander T. E. D. W. Veeder, U. S. Navy, Senior Assistant.
Lieut. Commander C. C. Rogers, U. S. Navy, Assistant.
Lieut. A. M. Beecher, U. S. Navy, Assistant.

OFFICE OF INSPECTOR OF ELECTRICAL APPLIANCES.

Lieut. Harry George, U. S. Navy, Inspector.
Lieut. J. M. Hudgins, U. S. Navy, Assistant.

COMPASS OFFICE.

Commander C. J. Badger, U. S. Navy, Superintendent.
Ensign W. L. Varnum, U. S. Navy (retired), Assistant.

NAVAL OBSERVATORY AND NAUTICAL ALMANAC OFFICE.

Capt. C. H. Davis, U. S. Navy, Superintendent.
Lieut. Commander E. E. Hayden, U. S. Navy, Assistant.
Prof. A. N. Skinner, U. S. Navy, Assistant.
Prof. W. S. Eichelberger, U. S. Navy, Assistant.
Prof. F. B. Littell, U. S. Navy, Assistant.
Prof. W. S. Harshman, U. S. Navy, Director Nautical Almanac.
Lieut. Commander T. D. Griffin, U. S. Navy, Mare Island Observatory.

HYDROGRAPHIC OFFICE.

Commander W. H. H. Southerland, U. S. Navy, Hydrographer.
Lieut. George W. Logan, U. S. Navy, Assistant.
Commander R. G. Peck, U. S. Navy (retired), Assistant.
Lieut. Commander Holman Vail, U. S. Navy (retired), Assistant.
Lieut. C. M. McCartney, U. S. Navy (retired), Assistant.

BRANCH HYDROGRAPHIC OFFICES.

Lieut. J. Franklin, U. S. Navy (retired), Baltimore, Md.
Ensign W. G. Richardson, U. S. Navy (retired), Boston, Mass.
Lieut. W. H. Faust, U. S. Navy (retired), Buffalo, N. Y.
Capt. E. H. Gheen, U. S. Navy, Chicago, Ill.
Lieut. J. W. Stewart, U. S. Navy (retired), Galveston, Tex.
Lieut. C. A. Foster, U. S. Navy (retired), New Orleans, La.
Lieut. Commander James H. Sears, U. S. Navy, New York, N. Y.
Lieut. Ridgley Hunt, U. S. Navy (retired), New York, N. Y.
Lieut. A. C. McMechan, U. S. Navy (retired), Norfolk, Va.
Lieut. H. M. Jacoby, U. S. Navy (retired), Philadelphia, Pa.
Ensign Creighton Churchill, U. S. Navy (retired), Sault Ste. Marie, Mich.
Lieut. J. C. Barnett, U. S. Navy (retired), San Francisco, Cal.
Lieut. F. W. Greenleaf, U. S. Navy (retired), Savannah, Ga.

INSPECTORS OF EQUIPMENT.

Naval Constructor H. G. Gillmor, U. S. Navy, Bath, Me.
Lieut. Commander E. E. Wright, U. S. Navy, South Boston and Quincy, Mass.
Lieut. Claude Bailey, U. S. Navy, Schenectady, N. Y.
Lieut. Commander W. P. White, U. S. Navy, Elizabethport, N. J., and Morris Heights, N. Y.
Lieut. Lucien Flynne, U. S. Navy (retired), Philadelphia, Pa., and Wilmington, Del.
Lieut. Commander W. S. Hogg, U. S. Navy, Baltimore and Sparrows Point, Md., and Richmond, Va.
Lieut. Commander P. J. Werlich, U. S. Navy, Newport News, Va.
Lieut. Commander Simon Cook, U. S. Navy, San Francisco, Cal.
Commander T. H. Stevens, U. S. Navy, Seattle, Wash.

SPECIAL DUTY.

Capt. C. H. Arnold, U. S. Navy, President Wireless Telegraph Board.
Capt. L. C. Logan, U. S. Navy, Inspector of Construction, United States Naval Coal Depot, Frenchman Bay, Maine.
Commander J. A. Norris, U. S. Navy, Philippine Longitude Expedition.
Commander George L. Dyer, U. S. Navy, Wireless Telegraph Board.
Lieut. B. C. Decker, U. S. Navy, Inspector of Construction, United States Naval Coal Depot, Sangley Point, Philippine Islands.
Lieut. J. M. Hudgins, U. S. Navy, Wireless Telegraph Board.
Civil Engineer George A. McKay, U. S. Navy, Inspector of Construction, United States Naval Coal Depot, Narragansett Bay, Rhode Island.
Commander F. M. Barber, U. S. Navy (retired), Investigation of Systems of Wireless Telegraphy Abroad.

The Bureau quotes herewith from a report recently made concerning the duties performed by officers attached to the Bureau:

The Bureau desires to invite your attention to the fact that great pressure has been exercised by the Department on this Bureau for officers for duty afloat and elsewhere during the past four years. The Bureau has made every possible exertion to meet this demand. In this connection your attention is invited to the large number of retired officers now on duty under this Bureau; that there are no more is not the fault of the Bureau, as set forth in a supplemental statement.

The Bureau fully recognizes the very great importance of having as large a naval force afloat as possible. This force constitutes the Navy, and all conscientious officers, particularly those high in authority and in the councils of the Department, will work faithfully with this end in view. This the Bureau has done.

The Bureau desires, however, to state that efforts in this direction, if carried too far, may, in its opinion, result in decreasing rather than increasing the efficiency of

the Navy. Any material or organization, however elastic, if expanded too far will collapse. The Bureau considers that the end sought is to place as large a force afloat as possible, maintaining throughout the service at the same time the high state of efficiency maintained in the past. Any departure from past methods must be in the nature of an experiment. It would be unfortunate if this experiment proved to be a failure.

The Bureau fully believes that not only can the force of officers at its disposal not be decreased, but that it has already been too much depleted. Of this the Bureau concerned must be the best judge.

CLERICAL FORCE.

The members of the clerical force of this Bureau have been efficient and faithful in the performance of their duties. Overtime work is constant. The Bureau desires to commend them to your favorable consideration.

ASSISTANT CHIEF OF BUREAU.

The Bureau has urgently recommended in the past that an assistant be provided who shall have authority to act in the absence of the Chief of Bureau. This recommendation is renewed.

OFFICE SPACE.

The four rooms on the third floor of the Navy Department assigned to the Bureau of Equipment are totally inadequate to accommodate the personnel of the Bureau. The condition of these rooms is unsanitary from overcrowding and bad ventilation. It is a great hardship for the clerical force of the Bureau to be subjected to this state of affairs, and there is no doubt that the health of many is seriously affected thereby.

REPORTS FROM SUBORDINATE BRANCHES OF THE BUREAU.

The repots of the Superintendent of the Naval Observatory, the hydrograper to the Bureau, the superintendent of compasses, the inspector of electrical appliances, and the director of the Nautical Almanac are inclosed herewith. They contain much of great value to the service, and their recommendations are approved by the Bureau. Your examination of these reports is respectfully urged.

ESTIMATES.

The estimates for the fiscal year ending June 30, 1904, are herewith submitted.

Very respectfully,

R. B. BRADFORD,
Chief of Bureau.

The SECRETARY OF THE NAVY.

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REPORT OF THE CHIEF OF THE BUREAU OF NAVIGATION.

DEPARTMENT OF THE NAVY,
BUREAU OF NAVIGATION,
Washington, D. C., October 6, 1902.

SIR: The administration of this Bureau was conducted by Rear-Admiral A. S. Crowninshield, U. S. Navy, now in command of the European Station, from June 30, 1901, until April 28, 1902, at which time I was appointed Chief of the Bureau.

I have the honor to present herewith a report of the Bureau of Navigation for the fiscal year ending June 30, 1902, and to inclose a report (A) showing the movements, condition, station, and service of all vessels of the Navy for the fiscal year ending upon that date, and reports of officers in charge of the various establishments under the control of the Bureau, as follows: (B) of the Chief Intelligence Officer; (C) of the Superintendent of the Naval Academy; (D) of the Commandant of the Naval Training Station, Narragansett Bay; (E) of the Commandant of the Naval Training Station, San Francisco, Cal.; (F) of the Governor of the Naval Home, Philadelphia, Pa.; (G) of the President of the Naval War College, Narragansett Bay; (H) of the Commanding Officer of the Gunnery Training Ship *Puritan;* (K, L, M, N, and O) of the Commanders in Chief of the Asiatic, North Atlantic, Pacific, South Atlantic, and European Stations, and schedule (P) of estimates for the support, during the coming fiscal year, of the Bureau and all those establishments for which appropriation is made under the Bureau.

DISTRIBUTION OF THE FLEET.

During the year which closed June 30, 1902, squadrons have been assigned as follows:

North Atlantic.—Under Rear-Admiral F. J. Higginson from July 1, 1901, to June 30, 1902. Rear-Admiral J. B. Coghlan was appointed second in command on June 2, 1902.

The Pacific.—Rear-Admiral Silas Casey from July 1, 1901, to June 30, 1902.

The European.—Rear-Admiral B. J. Cromwell from July 31, 1901, until February 9, 1902, when he was detached, leaving Capt. Joseph E. Craig as senior officer present until May 18, 1902, the date of the arrival of Rear-Admiral A. S. Crowninshield, who remained in command until the end of the fiscal year.

The South Atlantic.—Rear-Admiral B. J. Cromwell from July 1, 1901, to July 7, 1901, when he was detached, leaving Commander E. C. Pendleton, commanding the U. S. S. *Atlanta*, as senior officer present until the arrival of the *Iowa* at Montevideo on February 12, 1902, when Capt. Thomas Perry became senior officer present until March 16, 1902, the date of the arrival of Rear-Admiral G. W. Sumner, who remained in command until the end of the fiscal year.

The Asiatic.—Rear-Admiral George C. Remey, commander in chief, with Rear-Admiral Frederick Rodgers as senior squadron commander and Rear-Admiral Louis Kempff, junior squadron commander, from July 1, 1901, until March 1, 1902, on which date Rear-Admiral Frederick Rodgers assumed command as commander in chief, with Rear-Admiral Frank Wildes as senior squadron commander until April 27, 1902, when Rear-Admiral Robley D. Evans reported as senior squad-

ron commander, thus making Rear-Admiral Frank Wildes junior squadron commander, and in this order the squadron remained until the end of the fiscal year June 30, 1902.

The conditions in the Philippines have become more settled, and have permitted the Department to look forward to some more permanent arrangement of vessels for that station and China.

The plan for the assignment of vessels to the various squadrons at the close of the fiscal year June 30, 1902, was to divide the battleships of the Navy into two squadrons, one upon the North Atlantic Station and one upon the Asiatic Station. It is believed that for the present two squadrons are all that the number of our battleships will permit. In carrying out this policy it will be necessary to transfer the battleships which are now flagships of other squadrons to one of these two squadrons. This will involve the use of large cruisers as flagships of the remaining squadrons, namely, the Pacific, European, and the South Atlantic. This plan provided for 5 cruisers in the Pacific, with the *New York* as flagship; 4 cruisers in the European Station with the *Brooklyn* as flagship; 3 cruisers in the South Atlantic Station with the *Newark* as flagship. The arrangement at the close of the year, therefore, contemplated the *Oregon* and *Wisconsin* to reenforce the Asiatic Squadron, and the *New York* to return from that station to the Pacific as flagship. Many of the changes proposed by the above will be undertaken when the winter maneuvers in the West Indies shall concentrate three squadrons there.

The Department decided in the spring of 1902 to prepare a group of vessels to be in readiness to meet the frequent calls made for the services of our Navy in different quarters of the Caribbean and West Indies.

The Department contemplates maintaining in this division five cruisers, with the *Olympia* as flagship, to be based upon Culebra, and including a force of marines on board a transport. It is to be known as the Caribbean division of the North Atlantic Station, and will be commanded by Rear-Admiral J. B. Coghlan, U. S. Navy, who is second in command of the North Atlantic Station.

It is hoped that at an early date the vessels now doing duty as training ships may be concentrated under a flag officer, who will direct their cruising and assemble them at proper time for comparison of their efficiency.

According to the plan which was decided upon at the end of the fiscal year June 30, 1902, the distribution of the principal fighting force of the Navy will be as follows:

North Atlantic Station: *Kearsarge*, *Alabama*, *Massachusetts*, *Indiana*, *Maine*, *Illinois*, *Iowa*, and *Texas*. This force should be in the future maintained at not less than 8 battleships.

Caribbean division of North Atlantic Station: *Olympia*, *Montgomery*, *Marietta*, *Machias*, *Panther*, and *Detroit*.

Asiatic Station: *Kentucky*, *Oregon*, *Wisconsin*, *Monadnock*, and *Monterey*. The battleships in this squadron are to be increased to the number of 6 as soon as vessels of this class are commissioned.

The cruiser division of Asiatic Station: *New Orleans*, *Yorktown*, *Wilmington*, *Helena*, *Vicksburg*, *Princeton*, *Annapolis*, *Don Juan de Austria*, and *Isla de Cuba*. The *Rainbow* and a large gunboat division, will, as heretofore, be attached to the squadron for service among the islands and the rivers.

Pacific Station: *New York*, *Philadelphia*, *Boston*, *Marblehead*, and *Ranger*.

European Station: *Brooklyn*, *Chicago*, *San Francisco*, and *Albany*.

South Atlantic Station: *Newark*, *Atlanta*, and *Nashville*.

Since the last annual report many torpedo destroyers and torpedo boats have come forward and several have been commissioned. In the spring of 1902 it was determined to form a torpedo flotilla with a destroyer as leading vessel, and that these torpedo boats should cruise in group formation with the destroyer. This group, consisting of the *Decatur*, destroyer; *Bagley*, *Barney*, *Biddle*, *Shubrick*, *Thornton*, and *Stockton*, has, under the able command of Lieut. Lloyd H. Chandler, been successfully developed. It is intended to form other groups and enlarge this arm of naval warfare.

OPERATIONS OF THE FLEET.

NORTH ATLANTIC STATION.

During the summer of 1901, the North Atlantic Squadron undertook maneuvers of a serious character. In addition to tactical drills and target practice the squadron entered Nantucket Sound and demonstrated by actual practice the possibility of battle ships using both entrances into Nantucket and Vineyard sounds. The commander in chief, Rear-Admiral F. J. Higginson, displayed great zeal and professional ability in carrying out this work.

During the winter the squadron exercised in the West Indies, making its headquarters at Culebra, and entered upon new methods of instruction of the personnel, which under the head of "Progressive instruction" will, it is believed, advance the efficiency of the officers and men. The squadron also undertook for the first time certain drills and exercises tending to the development of fleet tactics under steam from a simple and elementary basis.

At the expiration of the period of drill and maneuvers in West Indian waters the North Atlantic Squadron proceeded north to the Southern drill grounds, and there an exhaustive military inspection of the squadron was made by a board of officers of which Admiral George Dewey was president. This inspection included target firing of the various ships and tactical maneuvers under steam, as well as minor drills. It was carried on for the purpose of determining the degree of efficiency attained by the system of "Progressive instruction" inaugurated during the winter. The result of the inspection demonstrated that marked improvement had been made, though the target firing, while indicating improvement, had not as yet reached the efficiency which it is hoped will be attained.

This squadron has been much engaged in the preservation of order at different points in the West Indies, and the Caribbean, and has rendered valuable services at such points as were indicated to the Navy Department by the State Department. The Secretary of State has expressed himself as well pleased with the prompt response of our vessels when called upon, and with the discretion and judgment displayed by their commanding officers in dealing with subjects of a diplomatic nature.

Early on the morning of May 20 the *Olympia*, carrying the flag of the commander in chief of the North Atlantic Squadron, with the

Kearsarge and *Alabama*, met the French battle ship *Gaulois*, having on board the members of the mission sent by the French Government to take part in the ceremonies attending the unveiling of the statue of Rochambeau in Washington, and bearing the flag of Vice-Admiral Fournier, of the French Navy, and escorted that vessel to Annapolis. Afterwards the *Olympia* and *Kearsarge* proceeded to Boston to assist at that port in the reception of the French visitors of the Rochambeau mission.

The following changes were made in the North Atlantic Squadron during the fiscal year:

Attached: *Indiana*, February 8, 1902; *Machias*, August 28, 1901; *Marietta*, September 26, 1901; *Olympia*, April 4, 1902; *Brooklyn*, June 2, 1902.

Detached: *Potomac*, April 24, 1902; *Indiana*, April 23, 1902.

The maneuvers of the North Atlantic Squadron during the summer of 1902, which were of much professional interest, will be embodied in the report of June 30, 1903.

During the coming winter, operations will be carried on in the West Indies, and will include the concentration of the three squadrons, North Atlantic, European, and South Atlantic, at Culebra, and the mobilization of various additional vessels and auxiliaries. When this concentration is affected a period of drills and exercises will take place, after which the squadrons will disperse to their respective stations. These operations will be under the direct command of Admiral George Dewey, with the Chief of this Bureau acting temporarily as his chief of staff.

SOUTH ATLANTIC STATION.

In the early part of July, 1901, the U. S. S. *Chicago* sailed from Rio de Janeiro, having been detached from the South Atlantic Station and ordered to proceed to the European Station for duty as the flagship of Rear-Admiral Cromwell. The U. S. S. *Iowa* was detached from the Pacific Station early in February and directed to proceed to the South Atlantic Station. She arrived at Montevideo on February 12, 1902. Since that time she has carried the flag of the commander in chief of the South Atlantic Station.

This vessel, owing to her deep draft, is unable to cruise in the river Plate. It is the desire of the Bureau to have the *Iowa* relieved by a cruiser more suitable for service on the South Atlantic Station.

The *Atlanta* has visited all the ports of the Plate River which her draft would allow her to enter, in addition to cruising on other parts of the station.

The Bureau desires to detail vessels of smaller displacement for service on this station.

PACIFIC STATION.

During the year the *Philadelphia* in addition to her other cruising made a cruise in the fall of the year with the naval militias of the States of Oregon and California on board.

The *Iowa* left the station in the early part of February and joined the South Atlantic Station.

The *Concord* was assigned to the Pacific Station on October 2, 1901, and was detached from that station and put out of commission on February 26, 1902, at the navy-yard, Mare Island, Cal.

The *Wheeling* reported to the commander in chief at San Diego, Cal., on April 2, 1902, and is now doing duty as station ship at Samoa. Upon the arrival of the *Wheeling* at Tutuila on May 24 the *Marietta* was detached from the Pacific Station.

The *Philadelphia*, *Iowa*, and *Concord*, outside of their regular cruising as described in the report of the commander in chief of the Pacific Station, have at different times during the year rendered valuable services in preserving peace and good order on the Isthmus, and guarding the transit across it.

It is the belief of the Bureau that additional vessels should be assigned to this station as the services on the Isthmus and the west coast of Central America are extremely trying owing to climatic conditions. No vessel should be required to remain on that coast for a protracted period of time. Therefore, it is necessary to have a sufficient number of small vessels attached to the station to insure frequent relief for vessels at Panama and adjacent ports on the coast of Central America.

EUROPEAN STATION.

The European Station was established during the early part of the fiscal year ending June 30, 1902, and has been continued ever since.

The *Illinois* bearing the flag of Rear-Admiral A. S. Crowninshield sailed from New York on April 30, 1902, for Naples, Italy, where she arrived in the early part of May, when Rear-Admiral Crowninshield took command of the European Station. On July 17, 1902, the *Illinois* bearing the flag of the commander in chief of the station arrived at Southampton, and on June 24 proceeded to Spithead, England, to take part in the naval review attending the coronation ceremonies of King Edward VII.

The *Albany* left the Pacific Station early in July, 1901, en route to the European Station via Singapore and other ports, and reported her arrival on the European Station on September 13, 1901. She cruised in the Mediterranean until the early part of June, 1902, when she proceeded north, touching at Gibraltar and other ports, to Cherbourg, France, where she arrived on June 30, 1902.

The *San Francisco* joined the European Station in April, 1902, and after cruising on the west coast of Africa, she proceeded north to Southampton in June.

The *Chicago* arrived on the station July 31, 1901, and cruised in the Mediterranean until June 17, 1902, when she proceeded to Havre, France.

The *Nashville* left the Asiatic Station on July 31, 1901, in company with the *Albany* for the European Station, and joined the flag of that station at Genoa, Italy, on September 22, 1901. This vessel cruised in the Mediterranean during the remainder of the year.

ASIATIC STATION.

Late in August the force on the Asiatic Station was divided into two squadrons—the Northern Squadron, for service in the northern waters of the station, and the Southern Squadron, for duty among the Philippine Islands. This division of the fleet it is believed will be continued with good results. The Bureau is of the opinion that it will be necessary to give increased authority to the squadron commanders.

In July Rear Admiral Frederick Rodgers, with the flagship *New York*, *New Orleans*, and *Yorktown*, was sent to Japan to attend the ceremonies of the unveiling of the Perry monument at Kurihama.

The successful work of our small vessels has been continued, and good order has been so far restored that further reduction of our force was found practicable, and the following-named gunboats were put out of commission and laid up for repairs: *Gardoqui*, *Leyte*, *Mindoro*, *Pampanga*, *Samar*.

Besides the above vessels being laid up for repairs or put out of commission, the following vessels were detached from the Asiatic Station: *Albany* on July 3, 1901, to the European Station; *Brooklyn*, March 1, 1902, to the navy-yard, New York; *Culgoa*, July 23, 1901, to the navy-yard, Boston, Mass.; *Bennington*, July 9, 1901, to the navy-yard, Mare Island, Cal.; *Manila*, April 15, 1902, to the navy-yard, Mare Island, Cal.; *Nashville*, July 3, 1901, to the European Station; *Petrel*, July 8, 1901, to the navy-yard, Mare Island, Cal.

On January 15, 1902, the *Rainbow* left Norfolk for the Asiatic Station, which station she joined on April 9, 1902, and is at present doing duty as flagship of the junior squadron commander, commanding the Southern Squadron.

The close blockade established by the Navy in the island of Samar contributed largely to the defeat of Lukban, the insurgent leader of that island. The services performed by the small gunboats of the Southern Squadron during this blockade was arduous and deserving of great credit. Some of the vessels of this squadron have also been engaged in surveying work, which they carried on with great success.

The Bureau is informed that the insular government of the Philippines proposes putting in commission a number of small vessels for the purpose of preserving order among the smaller islands of the archipelago and in the rivers. This force when established will, it is understood, act as a sort of "sea constabulary," and in such case our small vessels may be withdrawn from that work, thereby permitting them to devote their time to drills based upon "progressive instruction," and maneuvers similar to those which are to take place in the Caribbean Sea this winter, and also to the protection of our interests in the waters of China, Korea, and other points in the Pacific.

The cooperation of the Army and the Navy doing service in the Philippines has been cordial, and the best of relations have existed between the two military bodies.

The naval station at Cavite has many objections as the principal naval base in the Far East, and this Bureau concurs in the urgent recommendation of Rear-Admiral Frederick Rodgers, commander in chief of the station, that Olongapo be developed as a naval station where ships of the fleet can be docked and repaired.

The employment of the force on the Asiatic Station is fully described in the reports appended of the commanders in chief of that station during the fiscal year ending June 30, 1902, Rear-Admirals George C. Remey and Frederick Rodgers.

The Bureau has arranged to increase the force of fighting ships on this station by the addition of the battleships *Wisconsin* and *Oregon*, believing that good results will be obtained by increasing the number of heavy fighting vessels for the purpose of drill and maneuvers.

NAVAL DEFENSE.

The Navy Department has for many years considered the question of a proper system for the naval defense of the coast, which should take in the various forces and vessels at the disposal of the Government for war and render them efficient by means of well-considered methods. Among the questions involved have been the rendezvous for torpedo boats and like craft, the duties of the naval militias, the best anchorages for our fleets in time of war in defending the coast, the utilizing of our telegraph and telephone systems for communication, the formation of national naval reserves, and similar details. The advance in that direction has not been satisfactory, and it is believed that better results can be attained in developing and organizing the naval defense of our coast if we divide the coast into districts under naval officers of experience, and instruct them to work in their localities in the directions above mentioned. The Bureau of Navigation, after consultation with the general board, has, therefore, recommended to the Department that such a division of the coast be made, and the Department has, for purposes of experiment, named three sections of our coast, and appointed a flag officer to the command of each. Rear-Admiral P. H. Cooper, with his headquarters at Coasters Harbor Island, in Narragansett Bay, has command of the naval defense district extending from Chatham Light, Cape Cod, to Barnegat, New Jersey; Rear-Admiral W. C. Wise, with headquarters at Pensacola, Fla., of which navy-yard he is also commandant, commands the naval defense district of the Gulf, extending from the Mexican border to Key West, Fla.; Rear-Admiral Louis Kempff, with headquarters in San Francisco Bay, commands the naval defense district extending from Puget Sound to the Mexican border. It is believed that from these districts will come, after a certain experience has been gained, suggestions of a system which will in time prove an efficient method for the naval defense of the coast, and for the utilization, without additional expense to the Government, of those facilities which already exist under the civil branches of the Government. As these districts develop systems of defense other sections of the coast will be assigned to officers of experience.

VESSELS ON SPECIAL SERVICE.

A special squadron, composed of the *Illinois*, flagship, *Olympia*, *San Francisco*, and *Cincinnati*, was organized for the reception in the United States of Prince Henry of Germany. Rear-Admiral Robley D. Evans, U. S. Navy, hoisted his flag on board the battle ship *Illinois* and took command of this squadron on February 15, 1902. The squadron was assembled at Tompkinsville, N. Y., and there awaited the arrival of Prince Henry. The Prince on his tour through the country was accompanied by Rear-Admiral Robley D. Evans and Commander W. S. Cowles. After Prince Henry's departure from the United States the special squadron was dispersed, and Rear-Admiral Evans hauled down his flag on the battle ship *Illinois* on March 11, 1902.

In May, 1902, the U. S. S. *Brooklyn* was ordered to proceed to Havana, Cuba, to be in attendance at the ceremonies of the transfer of the authority of the United States in that island to the Cuban Gov-

ernment. On the day of the transfer, May 20, 1902, the *Brooklyn* dressed ship, and at noon, when the American ensign was lowered on the Morro, a national salute was fired, marine guard paraded, the ship's company manned the rail, and the band played the national air, a Cuban flag being immediately hoisted and saluted in a similar manner. The foreign ships in the port of Havana followed the movements of the *Brooklyn*. Shortly after the transfer of the Government was effected, Brig. Gen. Leonard Wood, U. S. Army, who had been governor-general of the island, came on board the *Brooklyn*, and was received with full honors due the position of governor-general. A salute of 17 guns was fired by the *Brooklyn*, as well as by the British cruiser *Psyche* and the Italian cruiser *Calabria*. These last salutes were returned by the *Brooklyn*. At 3.30 in the afternoon the *Brooklyn* proceeded to sea, to convey General Wood and his staff to a United States port.

The *Dixie*, *Cincinnati*, and *Potomac* were the vessels sent to the relief of the sufferers during the volcanic eruptions at Martinique and St. Vincent.

On May 10, 1902, telegraphic orders were sent to the commandant at San Juan, P. R., to dispatch the *Potomac* with relief supplies for the people of Martinique and St. Vincent. The *Potomac* took on board provisions and supplies, and sailed on the day of the receipt of the orders for Martinique and St. Vincent. Her cargo was landed at Martinique, as the *Indefatigable*, an English man-of-war, had brought 25 tons of stores from Trinidad for St. Vincent. Afterwards the *Potomac* was engaged in making numerous trips about the unfortunate islands for the rescue of sufferers, as well as for the recovery of the bodies of those who had perished in the American consulate at St. Pierre. In this latter work the crew of the *Potomac* were assisted by working parties from the *Cincinnati*. Before the completion of the removing of these bodies the working parties were compelled by fresh eruptions of the volcano to return to their ships, but later resumed their work on shore. The commanding officer of the *Potomac*, Lieut. B. B. McCormick, deserves great credit for the promptness he displayed in loading his vessel and carrying supplies to the sufferers, as well as for his zeal and judgment later in rendering aid wherever the services of his vessel were needed.

On May 11, 1902, the *Cincinnati* was cabled at San Domingo City to proceed to Martinique and St. Vincent to render assistance to the victims of the volcanic eruptions. On May 13, 1902, the *Cincinnati* arrived at Fort de France. Her commanding officer immediately assumed the direction of affairs regarding the relief of sufferers by the *Cincinnati* and *Potomac*. The prompt manner in which the commanding officer of the *Cincinnati*, Commander T. C. McLean, responded to the Department's telegraphic order and reached the scene of distress is commendable.

The *Dixie* on May 11, 1902, was ordered to take on board two months' provisions and coal as rapidly as possible. This vessel completed coaling and provisioning on May 13, and immediately proceeded to a wharf in Brooklyn, where she loaded with provisions and stores sent by the War Department for the relief of the distressed inhabitants of Martinique and St. Vincent. The crew of the *Dixie* worked night and day until the night of May 14, when she completed loading and sailed for Fort de France under full boiler power, and arrived at that port early

in the morning of May 21. The relief stores on board of the *Dixie*, in charge of officers of the Army detailed by the War Department, were landed at Martinique and St. Vincent. That the *Dixie* was able to coal, load with stores, and arrive at the islands in such a short time was due to the untiring efforts of her commanding officer, Capt. R. M. Berry, and officers under his command.

The promptness with which these three vessels responded to the call for aid undoubtedly saved many lives and lessened the suffering of the survivors of the disaster.

The collier *Leonidas* was loaded with lumber purchased by the British Government at Norfolk and dispatched to St. Vincent, where this material was utilized to build temporary quarters for the sufferers. In no other way could lumber have reached St. Vincent at such an early date.

The *General Alava*, although manned by naval officers and crew, has been doing duty under the civil government of the Philippines.

The *Ranger* has carried on extensive surveys in the Gulf of Lower California. The *Wren*, *Eagle*, and *Yankton* have also carried on very important surveys, and deserve much credit for the successful manner in which they performed this duty. The *Dolphin*, in addition to her other duties, made surveys on the coast of San Domingo from the middle of January to the middle of March.

On September 14, 1901, the *Michigan* was ordered to Buffalo, N. Y., at which place she arrived on Sunday, September 15, and by direction of the Secretary of the Navy, who was present at Buffalo, landed a battalion and took part in the military escort which accompanied the remains of the late President McKinley to the city hall. On Monday, September 16, another battalion, exclusive of the marine guard, was landed at 7 a. m., and formed part of the escort from the city hall to the railroad station.

Besides the above duty, this vessel surveyed South Fox Island Shoal, took out the naval militias of the States of Illinois and Michigan, and was also present at the national encampment of the Grand Army of the Republic, held at Cleveland in September, 1901.

During the months of August and September, 1901, the *Alvarado* visited the North Carolina Sounds on recruiting duty, and succeeded in enlisting 74 men for the naval service.

NAVAL COLLIERS.

The collier service is now performed by the *Ajax*, *Alexander*, *Brutus*, *Cæsar*, *Hannibal*, *Justin*, *Leonidas*, *Lebanon*, *Nanshan*, *Nero*, *Pompey*, *Saturn*, and *Sterling*.

During the year ending June 30, 1901, and previous to that time, the difficulty in procuring officers and men for the vessels of war resulted in the manning of the naval colliers with merchant crews. This has been successfully done and has given fair satisfaction. It is not regarded as the best method, but as the best that was possible, owing to the scarcity of officers and men. Toward the end of the year ending June 30, 1902, enlistments of men increased in number, and it is believed that by the end of the fiscal year, June 30, 1903, some of these colliers may be manned by naval officers and crews. These vessels, as well as all other auxiliaries, will supply some training, though imperfect, for the great number of inexperienced men that we must

expect for some years to come to man our ships. Every vessel that floats under naval control should be required to train men both for deck duty and for engine and fire room work. It is proposed to man one-half of these colliers with naval officers and seamen by June 30, 1903, and the remainder by June 30, 1904. It matters not how complete be the training given at barracks and on board regular training ships, there will still be much for the recruit to learn in practical seagoing vessels, much of which these colliers can supply. We will thus make a great saving in the expense of training men, and can well afford to have these vessels cost a little more for their maintenance under naval officers and seamen than they do at the present time under merchant officers and crews. No colliers or other auxiliaries connected with the Navy should be without a number of men constantly receiving training which a sea life gives them. Otherwise a great waste is incurred, especially when our service needs so many men to be trained annually. The Bureau desires, therefore, to emphasize the fact that the economy of using these colliers, while carrying coal, to instruct at the same time the enlisted force of the Navy is most marked and apparent.

When it is considered that if the men composing these crews were simply under instruction in regular training vessels of the Navy while the colliers carried merchant crews, it is evident that the increase of expense to train this number of men would be approximately the amount paid to the merchant crews. Again, the crews of the merchant service would not be available to the naval service in time of war, except by voluntary enlistment, whereas if the crews consisted of men regularly enlisted in the naval service they would be available for transfer to any vessel of war which might require their services.

TRAINING OF APPRENTICES.

During the year improvements have been made at the two training stations in Narragansett Bay, and San Francisco, Cal., all of which are enumerated in the reports of the commandants of the stations hereto appended. For lack of facilities elsewhere on the West coast for the training of landsmen, the Bureau has been compelled to use the training station at San Francisco for both apprentices and landsmen. This station being very crowded, it will in time become impossible for it to accommodate the men which the Department is obliged to send to it. In order to properly care for the enlisted men on the Pacific coast, vessels should be provided at the navy-yard, Mare Island, Cal., or the navy-yard, Bremerton, Wash., and it is suggested that until such time as Congress is willing to appropriate money for barracks, one of the army transports now offered to the Navy by the courtesy of the War Department be used as a receiving ship, either at Mare Island or Bremerton.

Attention is called to the urgent need of small brigs at the training stations for the exercise of the recruits in the waters adjacent to the stations, and it is recommended that three such vessels be appropriated for; two for Newport, and one for San Francisco.

The following vessels have been used during the year as cruising vessels for apprentices: *Essex*, *Hartford*, and *Monongahela* on the East coast; the *Alert* on the West coast. The movements of these vessels are given in Appendix A.

THE TRAINING OF LANDSMEN.

As Congress has hitherto not appropriated for barracks and other facilities for training stations for landsmen, the Bureau has continued its former policy of using such vessels as could be withdrawn from active duties as floating barracks or receiving ships. The training of landsmen on board of the above vessels and at adjacent places on shore has resulted in fitting them for regular cruising ships. This system can be continued, and though imperfect and unsatisfactory, it possesses the advantage of requiring but small sums of money for the purposes of maintaining good wharf spaces for the ships and clear ground on shore for drills and exercises.

A building at Port Royal Naval Station intended for a sawmill, but not completed, owing to the abandonment of the place as a naval station, was, by permission of the Secretary of the Navy, fitted as a mess hall, dormitory, bath house, and cook house for the accommodation of 300 recruits. As Congress did not appropriate for this station, the recruits have all been withdrawn and the building referred to abandoned.

By the transfer of the *Richmond* from League Island to Norfolk, to be used in conjunction with the *Franklin* at Norfolk, 1,000 recruits can be accommodated there. At this station preliminary instruction is given these green men prior to their transfer to cruising vessels. All has been done that could be accomplished without appropriations for the necessary facilities at this point. Arrangements should be made at Norfolk to accommodate 1,500 recruits.

A station with the necessary receiving ships and small craft for drill should be established at New London or in Narragansett Bay with capacity to accommodate 1,500 recruits.

It is found that in any force of enlisted men not less than 10 per cent of the number must be under training at all times. It is also seen that, since the acquisition of the Philippines and other outlying possessions, a certain percentage of our personnel—not less than 5 per cent—is necessary to allow for men preparing to be transferred from one station to another, for those who have returned to the United States previous to discharge, and for men who having been newly enlisted are awaiting assignment. The number of men now in the Navy and asked for from Congress amounts to 31,000. By 1906 this number should be increased to 40,000, in order to give the 34,000 necessary to man the vessels which will be in commission at that time, and 6,000 the 15 per cent of the total force—under instruction, awaiting transfer or assignment, and en route to or from their ships or stations. The above does not, however, include 10 per cent additional for war basis, or 3 per cent for sickness, which percentage should be taken into consideration when asking for an increase in the enlisted force.

Allowing 2,400 men to be accommodated at the New London and Norfolk stations, 1,200 at the proposed naval station on the Great Lakes, 900 landsmen and apprentices at the station on the Pacific coast, and 1,500 apprentices at the naval station in Narragansett Bay, we would, if the above facilities were provided, be able to accommodate 6,000 men, namely, 10 per cent, or 4,000 under training, and 5 per cent, or 2,000 awaiting transfers, etc.

The following vessels have been in use as cruising practice ships for landsmen: *Alliance*, *Buffalo*, *Dixie*, *Prairie*, *Lancaster*, *Topeka*, and

Indiana on the east coast and the *Mohican* on the west coast. The movements of these vessels are given in Appendix A.

Owing to the lack of training ships in the Pacific, landsmen for training have been sent direct from the training station at San Francisco to the *Iowa*, *Wisconsin*, and *Philadelphia*. In fact, every ship in the Navy to-day is a training ship, the battle ships and first rates all carrying in excess of complement landsmen and apprentices who have completed a course in a training ship. Special instruction has been given to the men of the engineer force, and the *Cincinnati* has been used as a training ship for firemen.

THE GUNNERY TRAINING SYSTEM.

The Bureau has continued in operation its plan for the training of seamen to be gun captains. The *Amphitrite* being in need of a general overhauling was placed out of commission on November 30, 1901, and the *Puritan* designated to take her place as a gunnery training ship. The *Puritan* was under repairs during the winter, which interfered considerably with the training of men, but in April the repairs were completed and active work was once more undertaken. A class of about 100 men has been under instruction, and the results have been very satisfactory, both officers and men taking the greatest interest in the development of the class. The *Peoria* has been utilized as a tender to the *Puritan* and has assisted in instruction and target practice with guns of small caliber. The report of the commanding officer of the *Puritan* is appended.

The Bureau has had under serious consideration the question of improving the gunnery practice of the fleet, and an officer, Lieut. Commander A. P. Niblack, U. S. Navy, has been detailed to take charge, under the Bureau, of all matters relating to the improvement of gunnery practice. It is believed that new methods developed under this officer's direction will be followed by good results. To give sufficient practice to officers and men in actual great-gun firing as the sole means of teaching gunnery would involve enormous expenditures of ammunition, the wearing out of guns, and the constant cruising of ships near favorable target practice waters. Happily, in addition to subcaliber practice, which was formerly our main reliance, modern ingenuity has improved machines for teaching aiming and pointing and devices for giving manual dexterity in all the details of handling ammunition, loading, training, pointing, and firing. It is now practicable to teach the elements of gunnery in port, and very cheaply. This instruction must be supplemented by target practice with full caliber ammunition at sea, but with these new mechanical devices the amount of ammunition to be expended in this way can be decreased.

In February, in General Order, No. 82, the Department announced the adoption of the Army Firing Regulations for Small Arms, 1898, in the Navy and Marine Corps, and steps were at once taken to equip ships with gallery targets, Krag reduced ammunition (caliber .30), and to put into effect the system of aiming, pointing, and firing so successfully used in the Army with small arms. In carrying out this order galleries have been built at the following yards and stations, at an average cost of about $600 each: Boston, New York (2), Norfolk, San Francisco, Mare Island, and Puget Sound. Galleries have been con-

structed from other buildings at Newport, Port Royal, and the Naval Academy. When more funds become available the system will be extended.

Ten aiming devices were purchased from abroad from this fund previous to June 1 and issued to the service. They have, in the main, been found entirely unsatisfactory, and new and improved devices are now under construction at the navy-yard, Washington, embodying many valuable suggestions and variations in type due to experience in the service with those improvised by officers. Early in April the fund for "Gunnery exercises, 1902," became exhausted and under a general order of the Department dated April 24, 1902, all charges against it were suspended. Of the appropriation of $12,000 for the current fiscal year (beginning July 1, 1902) less than $5,000 now remains to carry the Bureau through till July 1, 1903.

The naval appropriation bill has carried for the past few years the item:

> Gunnery exercises: Prizes for excellence in gunnery exercises and target practice; diagrams and reports of target practice; for the establishment and maintenance of targets and ranges; for hiring established ranges, and for transportation to and from ranges, twelve thousand dollars.

In the estimates for the fiscal year 1904, now submitted, the sum of $120,000 has been asked for "Gunnery exercises," which is ten times the usual amount, and it is hoped that it will be made immediately available, as pistol galleries are needed at all stations, rifle galleries at many others, and ranges up to 1,000 yards at various points, not to mention aiming devices, "prizes for excellence in gunnery exercises and target practice," and many other things necessary to progress in the one supreme and important particular for which vessels of war are built, viz, to carry guns that can hit.

The new gunnery instructions No. 1 and No. 2, which have just been issued to the service (having been previously submitted to many ships for criticisms and suggestions), embody the latest idea for training officers and men in gunnery. While far from perfect, they are a good basis for a sound and consistent scheme of instruction in small-arms and great-gun firing. The steps are progressive and are marked by qualifications to which letters of the alphabet are assigned in sequence, and from the quarterly reports (Form C and Form D) the Bureau can keep thoroughly informed of what each ship is doing to bring up the standard in proficiency in gunnery exercises and target practice. The adoption of the standard target screen 20 feet long and 16 feet high will do much to encourage accuracy in records, since hits only are to count, and each individual must fulfill identical requirements aboard each and every ship. All great-gun target practice, other than in connection with this scheme of gunnery instruction, has practically been suspended since July 1 of this year.

It is proposed later to issue Gunnery Instruction No. 3, prescribing the qualifications for "gun pointers" and allotting extra money to the most proficient, as well as establishing the conditions for an annual prize firing, and a battle-efficiency target practice, using the best known means of fire control, thus classifying (1) gun pointers throughout the service in their order of merit, and (2) ships under battle conditions (i. e., all guns firing) in their order of merit as determined by their percentage of hits on standard targets.

The services of Lieut. Commander A. P. Niblack, U. S. Navy, in improving the marksmanship of our crews have been recognized by the Department as of marked value and entitle this officer to great credit.

SCHOOL FOR PETTY OFFICERS.

To meet the demand for petty officers necessitated by the rapid increase of the enlisted force, schools have been established for petty officers of the seaman branch at the training station, Newport, R. I., and for the artificer branch at the navy-yards, Portsmouth, Va., and New York.

TORPEDO BOATS IN RESERVE.

The Bureau is endeavoring to take the torpedo boats out of reserve and commission them as fast as practicable, and it is believed that these vessels will prove very valuable as a school for the officers of the Navy.

BARRACKS.

The Bureau has heretofore asked Congress for money to establish barracks, and it has not changed its opinion as to the advisability of building such barracks, but failing to obtain appropriations for this purpose it is now endeavoring to meet the exigencies of the service in other ways. The Bureau, therefore, does not submit any estimate for this purpose, but desires that it should be understood, nevertheless, that the present system of housing and training recruits will not produce the best results.

NAVAL INSTITUTE.

The Bureau desires to express its thanks to the naval institute for its discussions of professional subjects, and to state that its publications have been of great value to the naval service.

INTERIOR ADMINISTRATION OF THE BUREAU.

During the past fiscal year 51,099 numbers were given to documents received in the Bureau and sent out from it. This is an increase of 2,077, or 4 per cent over that of the fiscal year ending June 30, 1901. This number, 51,099, probably represents about 500,000 separate papers.

The present force can with difficulty complete the work which daily confronts it, and lack of office room proves a serious impediment to the rapid and successful carrying on of the duties of the Bureau.

This Bureau has to do principally with the personnel of the Navy. This force is now rapidly increasing from 20,000 to 30,000, which latter is the number of men we expect to have early in the year of 1903. The increase in reports and other documents consequent upon this increase of men is almost in direct ratio to the increase in number of men, and the force of clerks at present having this matter in charge is insufficient to carry forward the work in the best manner. The Bureau calls the attention of the Department to the conscientious and earnest work which all in its establishment have done during the past year, in spite of the conditions above referred to.

A new method of filing and recording documents will go into effect on the 1st of January, 1903, and will, it is believed, improve the present system to a certain extent, but will do little toward obviating the inconvenience due to lack of space.

The Bureau of Navigation as now organized has one assistant to the Chief of Bureau allowed by statute. The rapidly increasing work of the Bureau makes it necessary that the number of assistants to Bureau authorized by Congress should be increased to three, and that the Secretary of the Navy should be given power to assign to these assistants certain duties now necessarily by law performed by the Chief of the Bureau. Much of the detail work of the Bureau could be done by the three assistants and many papers of a routine nature could be signed by them, thus enabling the Chief of the Bureau to give his time and attention to matters of greater importance.

The following tables give statistics for the enlisted force for the year ending June 30, 1902:

	Men.	Apprentices.	Total.
Applied for enlistment	29,931	7,112	37,043
Rejected for physical disability	8,292	2,429	10,721
Rejected for other causes	12,740	2,244	14,984
Disqualifications waived	394	20	414
Accepted but failed to enlist	1,060	398	1,458
Total number enlisted	8,233	2,061	10,294

Number in service June 30, 1902.

	Native born.	Naturalized citizens.	Aliens declared intentions.	Aliens resident of the United States.	Aliens nonresident.	Native born.	Foreign born.	Total.
Petty officers	3,338	1,597	232	31	28			5,226
Apprentices to petty officers						65	4	69
Total								5,295
Seamen, and other rates	5,369	975	922	198	523			7,987
Landsmen for training	4,033	241	35	9	4			4,322
Apprentices						3,482	228	3,710
Porto Ricans								8
Ladrones								17
Samoans								52
Filipinos								35
Hawaiians								7
Total	9,402	1,216	957	207	527	3,482	228	16,138
Grand total								21,433

Citizenship.

	Per cent.
Petty officers:	
Native-born	64
Naturalized	30
Have declared intentions	5
Aliens resident in the United States	.6
Aliens nonresident	.4
Men, exclusive of landsmen for training and apprentices:	
Native-born	67
Naturalized	12
Have declared intentions	12
Aliens resident in the United States	2
Aliens nonresident	7

Landsmen for training:	
Native-born	93.3
Naturalized	5.5
Have declared intentions	.8
Aliens resident in the United States	.3
Aliens nonresident	.1
Apprentices:	
Native-born	94
Foreign-born	6
Total enlisted force:	
Native-born	76
Naturalized	13
Citizens of the United States (an increase of 6 per cent over last year)	89

Discharges, desertions, and deaths.

	Men.	Apprentices.	Total.
Discharges:			
Expiration of enlistment	1,763	127	1,890
Disability	501	346	847
Services no longer required	21		21
Own request	173	16	189
Bad conduct	228	32	260
Illegal enlistment	13	17	30
Inaptitude	73	200	273
Undesirable	194	87	281
By purchase	97	138	235
Total	3,063	963	4,026
Desertions	2,766	271	3,037
Deaths	134	6	140

Continuous-service men:	
Men serving under continuous service June 30, 1902	3,802

The small number of discharges during the year ending June 30, 1902, as compared with the year ending June 30, 1901, is the result of the change of term of enlistment from three to four years. The act approved March 3, 1899, provided for a four-year term of enlistment, and as the terms of all men who had enlisted for three years prior to March 3, 1899, had expired on that date, only such men as enlisted for three years have been discharged by reason of expiration of service since March 3, 1899.

LANDSMEN FOR TRAINING.

During the year ending June 30, 1902, there have been enlisted in this rating 3,011 men. Of this number, 972 were at the training stations for landsmen, Norfolk, Va., and San Francisco, Cal.; 1,536 were on board of cruising training ships for landsmen, and 503 on board of other cruising vessels and receiving ships, for lack of better equipment for this class of the enlisted force.

There were in the service June 30, 1902, 4,322 young men who enlisted as landsmen for training, most of them coming from the Middle West States, remote from the seaboard, and were totally unacquainted with the new life upon which they had entered. Notwithstanding these unfavorable conditions, more than one-half of this number have advanced to the ratings of ordinary seaman and seaman, and some have attained petty-officer ratings in the artificer and special branches.

APPRENTICES.

On June 30, 1902, there were 895 apprentices at the training stations, Newport, R. I., and San Francisco, Cal.; 827 on board of cruising training ships for apprentices, and 1,988 on board of other cruising vessels, or on board of receiving ships and qualified for trans e to general service.

CLASSES UNDER INSTRUCTION.

Three hundred and eleven men were under instruction, as follows:

Seaman-gunner class	23
Artificer class	44
Petty-officer class	71
Yeoman class	51
Gun-captain class	88
Class in electricity	34

During the fiscal year 27 deaths have occurred among officers on the active list and 28 on the retired list, a total of 55. During the same period there have been 54 retirements, 46 resignations (inclusive of 30 naval cadets), and 1 discharge from the service. One application has been revoked.

Nineteen appointments have been made in the grade of assistant surgeon, and 8 in that of assistant paymaster. Other appointments have been 4 chaplains, 1 professor of mathematics, and 2 civil engineers. The number of warrant officers has been increased by the additional acting appointments of 10 boatswains, 10 gunners, 5 carpenters, and 45 warrant machinists.

The commissions issued during the past fiscal year numbered upward of 800, and about 66 warrants have been issued to former acting warrant officers whose fulfillment of certain requirements of the service entitled them to permanent appointments.

Under the provisions of the act of Congress approved March 3, 1899, providing for the retirement of enlisted men of the Navy, 22 enlisted men availed themselves of the benefits of the said act during the fiscal year ending June 30, 1902.

During the fiscal year ending June 30, 1902, there were received 82 applications for service pensions.

Seventy claims were allowed and 13 rejected.

Ten claims were pending July 1, 1901, and 9 pending July 1, 1902.

Claims pending July 1, 1901		10
Applications received during fiscal year 1901–2		82
Total claims		92
Claims allowed during fiscal year 1901–2	70	
Claims rejected	13	
Claims pending July 1, 1902	9	
		92

Forty bids were received for the transportation of enlisted men during the fiscal year ending June 30, 1902. Better rates were obtained for transcontinental transportation than last year; the total per capita cost, in parties, from New York to San Francisco, including fare, meals, sleeping-car accommodations, and transfers, being $41.53 cash, as against $50.45 last year. These rates were obtained by a combination, made in the Bureau, of the basing rate east of Chicago, bid by the Chesapeake and Ohio Railway, and that west of Chicago, bid by

the Chicago, Rock Island and Pacific Railway, the former agreeing to become the through transcontinental contractor west bound, and the latter east bound, and the route being: Pennsylvania Railroad, New York to Washington; Chesapeake and Ohio Railway to Cincinnati; Cleveland, Cincinnati, Chicago and St. Louis Railway to Chicago; Chicago, Rock Island and Pacific Railway to Denver; Denver and Rio Grande and Rio Grande Western railways to Ogden; and Southern Pacific to San Francisco.

The total cost to the Department would have been 45 cents less, in parties, via the Chicago and Northwestern, Union Pacific, and Southern Pacific between Chicago and San Francisco, but the bid via this route was rejected as the bond-aid credit asked was over $10 higher.

At the request of the Commandant of the United States Marine Corps, and with the consent of the representatives of the bidders, the contracts for transportation of enlisted men of the Navy were made applicable for the enlisted men of the Marine Corps.

ESTABLISHMENTS UNDER THE BUREAU.

OFFICE OF NAVAL INTELLIGENCE.

Capt. C. D. Sigsbee has remained Chief Intelligence Officer.

The Bureau has endeavored to place certain portions of the work of the Office of Naval Intelligence formerly done by naval officers in the hands of civil employees, and following this policy has decreased the number of officers on duty in that office. Owing to this change of policy the work of the Office of Naval Intelligence has been somewhat impeded and made more difficult, but it is hoped that when the new system has been longer in operation more satisfactory results will be obtained.

NAVAL ACADEMY.

Commander Richard Wainwright has remained Superintendent of the Naval Academy, and attention is invited to his report. The policy of the Bureau is to gradually decrease the number of officers on duty at the Academy and replace them by civilian instructors in the branches of study not of a purely professional nature. The demands for officers for active service makes this change of policy necessary.

Owing to the lack of a suitable training ship for naval cadets, the *Indiana* was temporarily withdrawn from service as a training ship for landsmen and assigned to the Naval Academy for the summer practice cruise of the cadets. The *Puritan* and *Terror* were stationed at the Naval Academy during a part of the term, to be used for instruction in engineering as well as for instruction in battle drills. The *Chesapeake* has been stationed at the Naval Academy during the year, and made a summer cruise with the naval cadets on board. The Bureau concurs in the recommendation of the Superintendent of the Naval Academy that a practice ship for the use of the midshipmen be constructed.

The Bureau renews its recommendation of last year that midshipmen after receiving their diplomas from the Naval Academy be commissioned as ensigns. The Bureau last year urged this as, among other things, a matter of justice to the young men concerned. Without touching upon this reason, the Bureau now urges it because of the paramount necessity for young commissioned officers in the fleet.

Since the close of the present fiscal year, June 30, 1902, the needs of the fleet for young officers have become so pressing that the Bureau

has recommended to the Department that the next class of midshipmen be graduated in February, 1903, or in the middle of their last year. The Department has approved this and has also ordered that the class of 1904 be graduated in February, 1904, and the succeeding class be graduated in June, 1904. The shortening of the course at the Naval Academy is forced upon the Department by the urgent demand for officers on board seagoing vessels.

NAVAL HOME.

Capt. James H. Sands, U. S. Navy, remained the Governor of the Naval Home at Philadelphia, Pa., until September 17, 1901, when he was relieved by Rear-Admiral Charles E. Clark, U. S. Navy, who is still in command of the Naval Home. The report of this station, which is appended, is approved.

NAVAL WAR COLLEGE.

The Naval War College was, by General Order No. 74, placed under the control of the Bureau of Navigation on December 16, 1901.

This establishment has remained under the command of Capt. F. E. Chadwick, U. S. Navy, and has steadily grown in usefulness to the Navy. It is here that the study of naval tactics is carried on with thoroughness and logical sequence, and from the college we may in time expect the enunciation of tactical principles on which shall be based the true tactics of our fleets.

Its advance in international law has been highly creditable, and has attracted the attention of all navies and of international lawyers throughout our own and other countries.

Its work in formulating plans of war is of great value to the Navy.

NAVAL TRAINING STATION, NARRAGANSETT BAY.

Capt. J. J. Hunker, U. S. Navy, remained commandant of the training station during the fiscal year. Attention is invited to his report, appended, marked "D."

The expansion of the naval training station in Narragansett Bay, while fairly successful, has been without any large system of development, and the result has therefore been unforeseen difficulties, due to uncertain appropriations and a resulting irregular policy. The Bureau believes that a complete and comprehensive plan should be established by a competent board, including a skilled architect. This plan should cover a period of many years in the future, and a harmonious method of work should be instituted for each year. The Bureau will, therefore, ask the Department to appoint such a board at an early date.

NAVAL TRAINING STATION, SAN FRANCISCO, CAL.

Rear-Admiral Henry Glass remains commandant of this station.

The particulars regarding this station will be found in the report of the commandant, appended, marked "E." A properly equipped hospital, with a contagious ward in a detached building, is a necessity at this station, as exemplified during the past year by the large number of cases of contagious diseases of mild type among the apprentices. The accommodations at this station are not equal to the demand, and it is recommended that the landsmen for training be removed from this station and quartered on board a suitable vessel in connection with

the receiving ship at Bremerton or Mare Island; also that, in order to obtain sufficient space for recreation and drill grounds and for more buildings, the War Department be requested to vacate that portion of the island now occupied for storage of torpedo cables, gear, etc., and that this portion of the island be leveled off and made suitable for parade and recreation grounds.

PERSONNEL.

It is a well-known fact that it requires years to train men to handle the battle ships that are provided by Congressional appropriation, and that it requires still longer to prepare officers for the same duties, while in the next few years many battle ships and armored cruisers will be completed, for which we shall not have officers and men trained. Men can be enlisted as landsmen, but they require two years to form the sea habit, and at least a year in addition for the special training required for the guns, turrets, and machinery of a modern ship. Therefore, we should have the men now provided who will be needed three years from now. As to the officers, the time required to produce the youngest and least experienced of them is longer than that needed to build and equip a battle ship of the first class.

Enlisted force.—An important question which has received attention has been the statutes on the subject of the discharge of enlisted men. Under present methods the naval appropriation act provides annually a sum of money for the transportation of enlisted men and apprentices to their homes and of enlisted men and apprentices discharged on medical survey for transportation to the place of enlistment, if residents of the United States. It is considered advisable that this legislation be incorporated as an amendment to section 1422, Revised Statutes of the United States, and thus perpetuate the provisions for transportation, rather than have yearly legislation on the subject. The text of the original section has been retained and only so much has been added as provides for the transportation of enlisted men and apprentices to their homes or to the place of enlistment according as their discharges may have occurred by reason of medical survey or expiration of enlistment.

AN ACT entitled "An act to amend section 1422, Revised Statutes of the United States."

That it shall be the duty of the commanding officer of any fleet, squadron, or vessel acting singly, when on service, to send to an Atlantic or to a Pacific port of the United States, as their enlistment may have occurred on either the Atlantic or Pacific coast of the United States, in some public or other vessel, all petty officers and persons of inferior ratings desiring to go there at the expiration of their terms of enlistment, or as soon thereafter as may be, unless in his opinion the detention of such persons for a longer period should be essential to the public interest, in which case he may detain them, or any of them, until the vessel to which they belong shall return to such Atlantic or Pacific port. All persons sent home or detained by a commanding officer according to the provisions of this act shall be subject in all respects to the laws and regulations for the government of the Navy until their return to an Atlantic or Pacific port and their regular discharge; and all persons so detained by such officer, or reentering to serve until the return to an Atlantic or Pacific port of the vessel to which they belong, shall in no case be held in service more than thirty days after their arrival in said port; and that all persons who shall be so detained beyond their terms of enlistment, or who shall, after the termination of their enlistment, voluntarily reenter to serve until the return to an Atlantic or Pacific port of the vessel to which they belong, and their regular discharge therefrom, shall receive for the time during which they are so detained or shall so serve beyond their original terms of enlistment an addition of one-fourth of their former pay. Whenever men or apprentices who enlisted within the continental limits of the United States are discharged without said limits or at a place therein not the place of their enlistment, in accordance with their written requests, in which they waive all claims to

transportation to the place of enlistment, the originals of such request must be signed by the applicant in the presence of a commissioned officer of the Navy, who must also sign said request as witness to such signature; a duplicate of such request must be entered in full after last entry on their enlistment records, and signed and witnessed as provided for in the original. Men or apprentices enlisted within the continental limits of the United States who are discharged within such limits by reason of expiration of enlistment shall be furnished, if they so desire, transportation to the place of enlistment; if discharged within such limits on the recommendation of a board of medical survey they shall be furnished transportation to their homes within the continental limits of the United States. If they enlisted within the continental limits of the United States and are condemned by medical survey while serving beyond said limits, they shall be transferred for discharge to a port within said limits, and upon arrival shall be discharged and furnished transportation to their homes within said limits. If they enlisted within the continental limits of the United States and upon the expiration of their enlistments immediately reenlist on board of the vessel or on the station from which discharged, they shall be entitled to transportation to the place of previous enlistment if discharged by expiration of enlistment, or to their homes as shown on their enlistment records of previous enlistment, if discharged by medical survey and provided their homes are within the continental limits of the United States. All persons enlisted without the continental limits of the United States may be discharged on the expiration of their enlistment either in a foreign port or in a port of the United States, or they may be detained as above provided beyond the term of their enlistment, but in no case shall they be entitled to transportation to their homes or to the place of enlistment: *Provided further*, That the shipping articles shall hereafter contain the substance of this section.

Section 1429 provides as follows:

It shall be the duty of every commanding officer of a vessel, on returning from a cruise, and immediately on his arrival in port, to forward to the Secretary of the Navy a list of the names of such of the crew who enlisted for three years as in his opinion, on being discharged, are entitled to an honorable discharge as a testimonial of fidelity and obedience, and he shall grant the same to the persons so designated.

The practice and methods originally adopted in connection with this section have since been discontinued. Formerly commanding officers submitted a list of men recommended for honorable discharge, and upon its receipt the Bureau issued the honorable discharges. This has not been the case for many years. The ships are supplied with blank honorable discharges, and when the term of service of men expires, and in the opinion of their commanding officers their records warrant honorable discharges, they are issued without reference to the Department. The last clause of the proposed amendment is in accordance with paragraph 3, article 882, United States Navy Regulations, and the entire amendment is in accordance with the methods practiced by the Bureau at the present time, under existing law in the naval appropriation act for fiscal year ending June 30, 1902.

To bring the present practice and the Revised Statutes into conformity the Bureau suggests the following legislation:

AN ACT entitled "An act to amend section 1429, Revised Statutes of the United States."

It shall be the duty of every commanding officer of a vessel, upon the expiration of the enlistments of men who enlisted for a term of three or four years, or apprentices who enlisted to serve during minority, to issue to such of them as in his opinion are entitled thereto, and are recommended by him, an honorable discharge as a testimonial of fidelity and obedience. When men or apprentices are discharged before the expiration of enlistment upon recommendation of a medical survey for injuries received or disabilities incurred in the line of duty, they shall be given honorable discharges, provided their records warrant the same, but their discharges shall show their physical disabilities.

In concluding the subject of the enlisted force, the Bureau recommends that two sailing ships and one brig be immediately authorized for the training of the enlisted men of the Navy, these vessels to be in accordance with the design and recommendation of the Bureau of Construction and Repair.

Officers.—The Bureau quotes from the statement made in the last annual report as follows:

> The ever-increasing need of line officers has made itself felt with augmented force during the past fiscal year. At no time in the history of the Navy has such a condition held as now exists. If the Department were suddenly called upon to man for war service all the vessels available in the navy-yards, it would be confronted with a requirement impossible to meet. It is a fact that there are not enough line officers of the Navy to man the vessels already constructed. This being the case, the Bureau need scarcely call attention to the state of affairs which will exist in about three years, when the vessels now under construction will be completed.

The statement of last year is again repeated, but with greater force. The need of line officers has become still more accentuated. The Department is now (October, 1902) engaged in preparing for the mobilization and concentration of the fleet in the West Indies during the winter for purposes of exercise and drill. This brings us face to face with the critical condition now existing due to the lack of officers, which has reached such a point as to be dangerous to the efficiency of the fleet. It is a well-known fact that the number of officers on board our ships is much less than that on board of the ships of the leading navies of the world, and it should be further noted that the ships of our Navy require more officers than the ships of other navies, owing to the fact that we are compelled to man our vessels with green crews having little or no knowledge of sea life, the only material available in this country.

As we are unable to draw men from the small merchant marine of this country, and as our Navy is increasing to a great war fleet, a large number of officers is required to drill the recruits drawn from the interior, who are absolutely without knowledge of sea life, recruits possessing excellent qualities and capable of rendering most valuable service to their country when once trained. To this end the following is submitted:

Line officers, including midshipmen after graduation, required for the present needs of the naval service.

Total number of line officers, including midshipmen after graduation, required for vessels now on navy list	1,206
For navy-yard, inspection, and court-martial duty, Naval Academy, recruiting, ordnance, equipment, and engineering	264
In transit to and from stations	70
Total	1,540
Two per cent sick	30
Two per cent on leave or waiting orders	30
Total	1,600
Number on navy list, including midshipmen after graduation	1,023
Short	577

INCREASE OF OFFICERS IN THE NAVY TO SUPPLY NEEDS OF IMMEDIATE FUTURE.

The minimum number of line officers required to man a battle ship is—

1 commanding officer.
1 executive officer.
1 chief engineer.
1 navigating officer.
6 turret officers.
2 secondary-battery officers
3 powder-division officers.
2 assistants to chief engineer.

17 in all, including midshipmen.

In order to make plain that the above table is the lowest possible estimate of officers actually needed on board battle ships, there is furnished the following table, showing the number of officers actually placed on board ships of similar displacement by foreign powers:

Nation—ship.	Number of line officers.	Remarks.
England (Barfleur)	33	Includes midshipmen.
France (Bouvet)	26	Do.
Germany (Kaiser Friederich III)	20	Does not include a number of midshipmen.

It will be seen at a glance, in comparing this table with the first table, that the estimate of the first table, which includes midshipmen, is at least 30 per cent smaller than actual conditions now existing in other navies.

The following table shows the number of line officers thought to be absolutely necessary for vessels now authorized by Congress but not completed:

Vessels.	Officers.	Vessels.	Officers.
Maine	17	Des Moines	12
Georgia	17	Chattanooga	12
Pennsylvania	17	Tennessee	15
Rhode Island	17	Washington	15
Louisiana	17	Arkansas	7
California	15	Nevada	7
Nebraska	15	Wyoming	7
West Virginia	15	Paducah	7
Maryland	15	5 submarines	5
Colorado	15	Cleveland	12
South Dakota	15	Galveston	12
Connecticut	17	Tacoma	12
Ohio	17	Florida	7
Virginia	17	Dubuque	7
Missouri	17	18 torpedo boat destroyers	39
New Jersey	17	7 torpedo boats	11
St. Louis	12		
Milwaukee	12	Total officers necessary for the new vessels, for which no provision has been made	498
Charleston	12		
Denver	12		

The probable graduates from the Naval Academy by the highest estimate will be as follows during the next four years:

1903	50
1904	65
1905	100
1906	140
Total	355

The line officers necessary to man the new vessels to be completed during the next four years, allowing a minimum complement, will be 498, to which should be added 25 per cent to allow for officers who are sick and those who are on detached or shore duty, giving a total of 623.

The casualties last year among the line officers of the service, other than cadets of the Naval Academy, were 40, which for the next four years, without an increase in the number of officers in the service, would make a total of 160, which, added to 623, would give a total of the needs of the service for the above vessels, as far as naval increase in personnel is concerned, of 783. This number added to 577, the shortage which exists at the present time, will give 1,360. The gradu-

ates expected from the Naval Academy being but 355 during the next four years, the total deficit July 1, 1906, will be 1,005. This does not provide for officers required for the auxiliaries that would be added to the list of naval vessels upon hostilities being declared: for these purposes there should be added at least 200 more.

The nominations of the Naval Academy under the present law provide for 1 midshipman from each Congressional district, including Delegates from Territories, and 10 by the President. This year's entries increase the number by 1 nomination from each Senator and 5 from the President, but these last are limited to four years, i. e., each Senator has 1 midshipman at the Academy for four years, and in case of failure another can be nominated.

It is urged that in order to provide for the yearly casualties in the service and the needs of the vessels building the following legislation be enacted:

Provided, That from and after the passage of this act there shall be allowed at the Naval Academy two midshipmen from every Member or Delegate of the House of Representatives, two from every United States Senator, one from the District of Columbia, and ten annually at large: *Provided further,* That the number of lieutenant-commanders in the Navy of the United States shall be two hundred, that the number of lieutenants shall be three hundred and fifty, and that the total number of lieutenants (junior grade) and ensigns shall be seven hundred: *Provided further,* That any midshipman upon successfully completing his four years' course at the Naval Academy shall be commissioned an ensign: *Provided further,* That no midshipman shall be prevented from being so commissioned by any law limiting the number of lieutenants of the junior grade and ensigns: *Provided further,* That the increase in the grades of lieutenant-commander and lieutenant herein called for shall be filled by promotion each year of not exceeding twenty-five per cent of the total number of the increase of each: *And provided further,* That all acts or portions of acts inconsistent with the provisions of this section are hereby repealed.

The increase above provided for will be 30 lieutenant-commanders, 50 lieutenants, 350 lieutenants (junior grade) and ensigns.

Vice-admirals.—The concentration of naval forces which the Bureau has recommended to the Department, and which places one-half of our heavy fighting ships in the North Atlantic Station and one-half on the Asiatic Station, presents many important features, one of which is the desirability of having an officer of high rank for the command of these great fleets. To provide officers for these two commands it is recommended that two vice-admirals be authorized by Congress, or that it sanction the appointment of acting vice-admirals for the commands of these large fleets.

National naval reserve.—The subject of a national naval reserve is still occupying the minds of the Bureau, which has consulted frequently with the General Board on this subject. The Bureau is not at present prepared to make any recommendations concerning the matter.

In conclusion the Bureau invites the attention of the Department to the serious defects inherent in the present system for administering the personnel of the Navy.

To remedy these defects and bring the fleet generally to a high point of discipline and training, there is needed a larger control over the personnel and the organization of the fleet than can be effectively maintained by a single bureau.

Under the direction of the Secretary the Bureau of Navigation is required to administer the affairs of the fleet in preparation for war; to arrange for its organization and mobilization, and for the maneuvers of our own fleet and the study of those of foreign squadrons; to plan for combined operations with the Army; to make, study, and

develop war plans; to organize the reserves of men and ships; to direct the War College and Office of Naval Intelligence; to arrange for the complements and details of officers and men, the training of officers and the recruiting and training of men, and to execute all plans of campaign. These are the bare outlines of its duties; the details are of too varied a character to be properly administered with the limited authority now vested in the Bureau.

These duties, necessary to an efficient administration of the fleet, should be grouped in natural subdivisions, with responsible heads working in harmony under a single chief.

To insure this larger control and closer responsibility the methods of a general staff are desirable. Efforts have been made since 1893 to develop such methods, but without legislation by Congress. Up to the present moment a marked success has attended this development, and to-day we see the Bureau of Navigation, General Board, Office of Naval Intelligence, War College, and Board of Inspection and Survey drawing steadily closer together as component parts of a general staff.

We can, however, go no further without Congressional legislation which shall establish a general staff with the control necessary to administer more effectively the affairs of the fleet. There is needed a general staff and a chief of the general staff, who, by direction of the Secretary, shall be responsible for the personnel and the efficiency of the fleet in commission; who shall, in fact, direct, under the Secretary, the military affairs of the fleet and be responsible to him for its condition. A complete plan is prepared, which will require only legislative recognition of the existence of a chief of general staff and the several sections necessary to carry out the various details.

Without such an organization, the power to establish thorough reforms will be lacking.

Very respectfully,

H. C. TAYLOR,
Chief of Bureau.

The SECRETARY OF THE NAVY.

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REPORT OF THE CHIEF OF THE BUREAU OF ORDNANCE.

DEPARTMENT OF THE NAVY,
BUREAU OF ORDNANCE,
Washington, D. C., October 1, 1902.

SIR: I have the honor to submit the annual report of this Bureau, and also to transmit herewith estimates for the fiscal year ending June 30 1904.

ESTIMATES.

Fuel, tools, materials, and labor; maintenance of proving ground and smokeless-powder factory; for target practice; conversion of 6-inch guns to rapid-fire; reserve supply of ammunition; purchase and manufacture of smokeless powder; new and improved battery for the *New York;* new boiler plant, new and improved machinery for existing shops, extension of steel casting plant, and for conversion of large gun lathes from steam to electric drive; for the Naval Gun Factory, navy-yard, Washington, D. C.	$2,485,000.00
General expenses of the torpedo station	65,000.00
Naval Militia	60,000.00
General repairs to buildings, magazines, machinery, etc	30,000.00
Contingent, freight, etc. (miscellaneous ordnance)	75,000.00
Civil establishment at navy-yards and stations	46,006.75

Public works, Bureau of Ordnance:	
New naval magazine at or near Boston, Mass	$300,000.00
Additional wharves and slips for torpedo boats, and for moving present boathouse and dredging, torpedo station, Newport, R. I.	25,000.00
Tools and improvements, naval magazine, Iona Island, New York	14,200.00
Electric elevators and storehouses, improvements to shell houses and magazines, naval powder depot, New Jersey	19,600.00
Steel gun platforms, sulphuric-acid plant, lightning protection, for Naval Proving Ground, Indian Head, Md	50,500.00
Shell house, naval magazine, St. Juliens Creek, Virginia	11,000.00
Connecting with city water mains naval magazine, Fort Norfolk, Va	1,500.00
Increase of the Navy, armor and armament	10,000,000.00
Total	13,182,806.75

The operations of the Bureau during the past year have chiefly been those of preparing the armament and ordnance outfits and providing armor for vessels under construction, maintaining vessels in commission, overhauling and refitting for service the batteries, etc., of vessels in ordinary, and improving the condition and facilities of the ordnance department at the several naval magazines, navy-yards, and stations to meet the increasing requirements of the Navy.

The armament and ordnance outfit for battle ships *Maine*, *Missouri*, and *Ohio*, and for harbor-defense monitors *Arkansas*, *Florida*, *Nevada*, and *Wyoming* is in an advanced stage, the more important part being already completed; and that for the six cruisers of the *Denver* class, the next vessels to be completed, is also in an advanced stage and will be ready for the vessels when required.

Two hundred and thirty-four guns have been completed at the Naval Gun Factory; 65 are in process of manufacture, and sets of forgings for 146 guns of various calibers have been delivered, on which no work has yet been performed. One 13-inch gun has been relined and six 30-caliber 6-inch B. L. guns have been converted into quick-firing guns. Two hundred and seventy-five gun mounts of various types have been completed, and a large number of others are in process of manufacture; and much work has been done in the way of alterations and improvements to mounts of earlier manufacture with a view to improving their efficiency. No material change has been made in the method of gun construction, except that the tubes of all guns of late manufacture of and above 6 inches in caliber are reinforced to the muzzle.

A new battery of twelve 6-inch, quick-firing guns and mounts for the *Baltimore*, for which a special appropriation was granted, is being manufactured by the Bethlehem Steel Company, and will be completed in a few months.

Work is now in progress on the armament for 5 battle ships of the *Virginia* class, for 6 armored cruisers of the *Pennsylvania* class, and for 3 protected cruisers of the *St. Louis* class. These vessels require twenty 12-inch guns of 40 calibers, sixty-four 8-inch guns of 45 calibers, one hundred and eighty-six 6-inch guns of 50 calibers, two hundred and twenty-two 3-inch guns of 50 calibers, one hundred and sixty-eight 3-pounder semi-automatic guns, and a large number of other small guns.

The forgings have already been delivered for a large number of the above guns and work thereon is now in progress.

No work has yet been begun upon the armament of the 2 battle

ships, 2 armored cruisers, and 2 gunboats authorized at the last session of Congress, the vessels not yet being begun or contracted for.

For the two new battle ships *Louisiana* and *Connecticut*, 12-inch guns of 45 calibers have been designed, this increase in length of 5 calibers over the previous design being made in order that the muzzles of the guns will project well clear of the ship's side, when they are trained abeam, in order that the blast from them may not affect the medium caliber guns on the deck below.

The 13-inch gun which was injured on board the *Kearsarge* in January, 1901, by the premature explosion of a shell in its bore, has been repaired by the insertion of a lining tube, and is now in use at the Naval Proving Ground.

The only accident of importance that has occurred to guns afloat was on board the *Kearsarge* on February 21, 1902, when the muzzle of a 5-inch gun was broken off at target practice; fortunately no one was injured. Brown powder was being used at the time, and the presumption is that the powder had become slow and carried the pressure too far towards the muzzle.

Thirteen-inch gun No. 2, on board the *Indiana*, to which reference has been made in previous reports as being somewhat eroded at the front slope of the chamber, will be replaced by another gun, and will be sent to the gun factory to be relined, as the erosion has become more marked. This gun has been fired but 71 rounds, and is one of several guns made about the same time and under the same specifications, which have been fired as many times and show no sign of erosion.

There has been practically no injury to guns in service due to the erosion of the bore by the powder gases. Six-inch, 40-caliber gun No. 121 has been fired 1,169 times at the proving ground and 65 times elsewhere—a total of 1,234 rounds—and is only slightly eroded at the origin of the rifling and will probably be relined.

13-INCH GUNS.

One gun of this caliber has been completed and is available for use.

The 13-inch gun removed from the *Kearsarge* has been relined and is in use at the proving ground.

Gun No. 34, which was disabled by an accident to its tube, is being reassembled with such additional new forgings as were necessary.

12-INCH GUNS.

Eleven Mark III guns of 40 calibers have been completed, thus completing the 20 required for battle ships *Maine*, *Missouri*, and *Ohio* and for harbor-defense monitors *Arkansas*, *Florida*, *Nevada*, and *Wyoming*. All the 12-inch guns for the battle ships above named have been sent to the shipyards, except one to the Pacific coast, which now awaits the special car used for transportation. The 12-inch guns for three of the monitors above referred to have also been shipped.

The forgings for the twenty 12-inch 40-caliber guns required for five battle ships of the *Virginia* class have been delivered.

10-INCH GUNS, 40 CALIBERS.

No orders have yet been placed for guns of this type, eight of which will be required for armored cruisers *Tennessee* and *Washington*. Designs have been prepared, and before long forgings will be ordered for the type gun.

8-INCH GUNS, 45 CALIBERS.

Twenty-four sets of forgings for the 8-inch guns for six armored cruisers of the *Pennsylvania* class have been ordered and delivered, leaving 56 sets to be ordered for seven battle ships yet unprovided for. The type gun has been completed and proved. The exact size of powder has not yet been determined for this gun, but with a charge of 101 pounds of smokeless powder, made for the 7-inch gun, a muzzle velocity of 2,827 foot-seconds was attained, with a 250-pound projectile with a chamber pressure of 17 tons per square inch. The powder used was too quick for the gun, and better results may be expected when a more suitable powder is used, and a sample will soon be ready for test.

Six guns of this class are assembled and considerable work has been done on several other sets of forgings.

8-INCH NICKEL-STEEL GUNS, 35 CALIBERS.

Two guns of this type, Nos. 52 and 83, have been fitted with the latest type of breech mechanism and will be utilized as occasion may require.

Four 8-inch 35-caliber guns removed from the *Baltimore* are in excellent condition and available for use, as are also two 30-caliber 8-inch rifles removed from the *Boston* they having been replaced by others.

7-INCH GUN, 45 CALIBERS.

Only one gun of this type has yet been manufactured. It has been used at the proving ground for the development of powder and of a suitable mount.

This gun, which was designed to give a muzzle velocity of 2,900 foot-seconds to a projectile weighing 165 pounds, within a limit of chamber pressure of 17 tons per square inch, has developed a muzzle velocity of 3,035 foot-seconds, with a maximum chamber pressure of 16½ tons, a record which it is believed has not been equaled or excelled by any gun of equal class.

Twenty-four guns of this class are required for battle ships *Louisiana* and *Connecticut;* the forgings have not yet been ordered, but soon will be, and work thereon will be begun as soon as they are delivered.

6-INCH, 50-CALIBER QUICK-FIRING GUNS.

Two hundred and sixty-six guns of this type are required for all new ships authorized. Forgings have been ordered for 192 guns, about 100 of which have been delivered. Seventy-four sets of forgings remain yet to be ordered.

Thirty-nine guns have been assembled; 16 are wholly completed, and 13 are ready to have their breech mechanisms attached, which are also ready. A number of others will follow rapidly.

The Bureau has recently ordered the manufacture of a 6-inch 50-caliber gun, to weigh about 8 tons, from which a muzzle velocity of from 3,400 to 3,500 foot-seconds is expected, with a 100-pound projectile.

6-INCH, 40-CALIBER GUNS.

Several guns of this class are in various stages of manufacture; 4 have been completed and 1 has been proved. These guns are to replace such as may be injured or worn out and for proving ground use.

6-INCH, 30-CALIBER GUNS.

Twelve converted guns of this class are available, and will, with new pedestal mounts, probably be supplied to the *Philadelphia* on her next commission.

Twelve guns of this class, landed from the *Newark*, have had their trunnion bands removed and have been fitted with bronze sleeves and supplied with pedestal mounts in place of those of the gravity-return type, and have been remounted on the vessel. Funds having been appropriated for the purpose, the Bureau proposes to manufacture or have made by contract twelve 6-inch, 45-caliber guns and mounts for the *Newark*, similar to those now being made for the *Baltimore*.

Six 30-caliber B. L. guns on board the *Texas* have been replaced by converted guns, and as soon as the former are received at the gun factory they will be converted.

5-INCH 50-CALIBER R. F. GUNS.

Sixty-one sets of forgings for guns of this type have been ordered and delivered, 58 have been assembled, rifled, chambered, and made ready to receive their breech mechanisms. Sixteen have been completely finished and others will soon follow.

The Bethlehem Steel Company is now making 22 guns of this type, with mounts, for auxiliary cruisers, and in all probability 20 will be made for the *New Orleans* and *Albany* in place of their mixed batteries of foreign design and manufacture.

4-INCH 50-CALIBER R. F. GUNS.

Sixty-seven sets of forgings in all have been ordered for guns of this type, most of which have been delivered. Sixteen are for the 4 harbor-defense monitors of the *Arkansas* class and 50 for auxiliary cruisers, the remaining 1 being the type gun. Thirty-one have been assembled, 20 of which have been fitted with their breech mechanisms and the other 11 are ready to be fitted.

The remaining guns are well advanced and could soon be completed. Twelve guns of this type will probably be required for gunboats *Paducah* and *Dubuque* about to be contracted for. Forgings for these guns have not yet been ordered.

4-INCH 40-CALIBER R. F. GUNS.

Twenty-five guns of this type are in process of manufacture, 10 of which are in an advanced state. These are intended for training ships, being light, handy, and comparatively inexpensive.

Two guns of this class, Nos. 96 and 97, which were injured by the explosion of shells in the bore, near the muzzle, have been repaired by means of short liners.

3-INCH 50-CALIBER R. F. GUNS.

The required number of guns of this type, usually designated as 14-pounders, is 379, namely:

Three battle ships of the *Maine* class, 6 each	18
Five battle ships of the *Virginia* class, 12 each	60
Two battle ships of the *Louisiana* class, 20 each	40
Six armored cruisers of the *Pennsylvania* class, 18 each	108
Two armored cruisers of the *Tennessee* class, 22 each	44
Three protected cruisers of the *St. Louis* class, 18 each	54
Sixteen torpedo boat destroyers, 2 each	32
Type gun	1
For proving ground and for spare	10
Newark and *Baltimore*, 6 each	12
Total	379

Twenty-five 3-inch 50-caliber guns for the above purpose were purchased from the American Ordnance Company, and 161 sets of forgings have been ordered and delivered for guns to be made at the Naval Gun Factory, making 186 guns in all, leaving 193 yet to be provided. The guns already ordered will supply the *Maine* and class, the *Newark* and *Baltimore*, sixteen torpedo-boat destroyers, and six armored cruisers of the *Pennsylvania* class, leaving 15 for spare and for the proving ground.

The Bureau has ordered new designs prepared of a 50 caliber 3-inch (14-pounder) gun and mount, embodying the latest desired features in every particular; the guns to have semi-automatic breech mechanisms and improved sights, and to be fitted for electric and percussion firing, and will not order any more material for or purchase guns of this class until the design is perfected. It is proposed to furnish the new guns to the vessels not already provided for.

The guns ordered from the American Ordnance Company have been delivered, and about 100 of the 161 being made at the Naval Gun Factory are in a very advanced state, many of them being wholly completed.

Seventy-five guns of this class have been ordered from and delivered by the American Ordnance Company for auxiliary cruisers.

3-INCH MARK II FIELD GUNS.

Sixty-one sets of nickel-steel forgings have been ordered, 24 of which have been delivered. Two guns have been wholly completed and 13 are nearly so.

SIX-POUNDER SEMI-AUTOMATIC GUNS AND MOUNTS.

One hundred and fifteen in all of the Maxim-Nordenfelt type have been ordered to be made at the Naval Gun Factory. The first 65 are completed, and on the last order for 50 about 8 per cent of the work has been done.

Fifty 6-pounder semi-automatic guns were ordered from the Driggs-Seabury Gun and Ammunition Company some time ago, 41 of which have been delivered.

THREE-POUNDER SEMI-AUTOMATIC GUNS.

Fifty guns of this type were ordered from and manufactured by the American Ordnance Company, and the Bureau is now contemplating purchasing a considerable number—probably 100—and also making a number at the Naval Gun Factory.

ONE-POUNDER HEAVY AUTOMATIC GUNS.

An order has just been placed at the Naval Gun Factory for the manufacture of 50 guns of this type.

ONE-POUNDER R. F. GUNS.

A number of guns of this class have been purchased from the American Ordnance Company, and an order has recently been placed for the manufacture of 350 at the Naval Gun Factory.

The Bureau is having a design prepared for a nine-pounder subcaliber attachment for use in heavy guns, and is also considering the adoption of a nine-pounder boat and landing gun for small vessels.

GUN MOUNTS.

Eight 12-inch spring-return turret-mounts and details, such as power rammers, electrically operated ammunition hoists, etc., have been completed at the Naval Gun Factory and shipped for the four harbor-defense monitors of the *Arkansas* class, and 10 similar mounts, etc., of the 12 required for the three battle ships of the *Maine* class have been completed, the remaining 2 being 80 per cent completed.

The 12-inch Mark V type mount for the five battle ships of the *Virginia* class is progressing favorably, as has also the construction of the proving-ground girders for its test. It will be some months yet, however, before the type mount is completed.

Eight-inch mounts. Two Mark X mounts have been completed and are available for issue.

One Mark XII 8-inch mount, being the type turret-mount for the battle ships of the *Virginia* class and the armored cruisers of the *Pennsylvania* class, has been manufactured and given a preliminary test at the proving ground. Its performance was very satisfactory, but it will be subjected to a further test for endurance. Materials have been ordered for similar mounts for the vessels above referred to.

Seven-inch mounts.—The only mount thus far completed was for proving-ground use, but a type mount for service is now in an advanced stage.

Six-inch mounts.—Four Mark VII mounts have been shipped to the *Massachusetts* to replace those formerly in use on that vessel, and on the return of those from the *Massachusetts* they will be modified for the *Indiana* and those of the latter vessel will in turn be modified for the *Oregon*.

Twelve mounts of this mark have been completed and shipped to the *Newark*.

Sixteen Mark X mounts for 50-caliber guns have been completed for the *Maine*; 16 for the *Missouri* are in an advanced stage, and 16 for the *Ohio* are in process of manufacture.

Material has been ordered for 84 similar mounts for the six armored cruisers of the *Pennsylvania* class, and 134 will be required for other vessels authorized.

Five-inch mounts, Mark VIII.—These mounts are to replace the Mark VI mounts now in service, and, with the exception of the pivot stand, are entirely new. Twenty-four have been completed and 28 partly completed. Thirteen such mounts have been supplied to the *Hartford*, and 14 to the *Kearsarge*, and 12 are being prepared for the *Brooklyn*. They are fitted with an auxiliary training attachment on the right side, and the elevating handwheel on the left side is in a vertical plane parallel to one through the axis of the bore of the gun, which will greatly facilitate the operation of pointing.

Sixty Mark IX 5-inch mounts are being manufactured for the six cruisers of the *Denver* class, several of them being completed.

Four-inch mounts.—Sixty-seven Mark VIII mounts for 50-caliber guns have been ordered, 20 of them are completed and the remainder are in an advanced stage, 16 of these mounts are for the four harbor-defense monitors of the *Arkansas* class, 50 for auxiliary cruisers, and 1 is the type mount.

Twenty Mark VII 4-inch mounts for 40-caliber guns have been completed, and a considerable number of others are in various stages of completion, being intended to replace mounts of earlier type now in service.

Three-inch mounts.—About 200 mounts for 50-caliber guns have been ordered manufactured at the Naval Gun Factory; several have been completed and shipped to vessels fitting out, and others are in various stages of completion. These mounts have a training-bar, and mechanical elevating gear. There still remains a large number of 3-inch mounts to be made, and, as before stated, a new design is being prepared.

In addition, much work has been done on mounts for field guns and for those of smaller caliber, and eighty-nine one-pounder sub-caliber attachments and sixty-eight of smaller caliber have been manufactured at the Naval Gun Factory.

Brass cartridge cases, from 1-pounder to 6-inch, to the number of 134,996 have been manufactured at the Naval Gun Factory; also 7,900 powder tanks. Pressure gauges, firing locks, and tools for use in the manufacture of guns have been made in large quantities, and a great variety of miscellaneous work has been performed.

The Bureau is endeavoring to edit a series of publications in pamphlet form containing a complete description, with appropriate lithographic reproductions, of all guns, mounts and ordnance outfits supplied to ships. This work, which is of great magnitude, is now in part in the hands of the Public Printer. It is intended, when

they are completed, to supply each vessel with such pamphlets, suitably bound, as pertain to her outfit. It is impossible to embody all this information in a single volume or to keep such a volume up to date, but by using pamphlets it can be done, as additional ones can be issued as required.

This work, much of which was originally prepared by the late Lieut. R. D. Tisdale, U. S. Navy, is in charge of Lieut. F. K. Hill, U. S. Navy, attached to the Bureau of Ordnance.

ARMOR.

The manufacture of armor has progressed in a satisfactory manner, 7,612 tons having been delivered at the various shipyards during the past year, and it is probable that this amount will be considerably exceeded during the next twelve months. At the request of the Bureau the armor manufacturers consented to increase their facilities to the extent necessary to meet the requirements of the Department. Efforts were made by the Bureau to standardize the drawings for 8-inch and 12-inch turrets, in order that the armor manufacturers might have abundant work while waiting for detailed drawings of the side and other armor, in the absence of which work can not be proceeded with. Much to the Bureau's regret, it was unable to carry out this scheme, for want of cooperation on the part of the parties concerned except the armor manufacturers, who favored the plan suggested.

No improvement worth speaking of seems to have been made in the quality of armor of late, which is to be regretted, as guns, powder, and projectiles have each made a decided advance, rendering it all the more necessary that there should be an improvement in the quality of armor, but none seems to be in sight at present.

Recently the armor manufacturers voluntarily made a reduction of 10 shillings per ton on the royalty for the Krupp process.

All the armor for the four harbor-defense monitors of the *Arkansas* class and for battle ships *Maine*, *Missouri*, and *Ohio* has been completed and deliveries are being made for the six armored cruisers of the *Pennsylvania* class. No contracts have yet been made for the armor required for battle ships *Louisiana* and *Connecticut* and armored cruisers *Tennessee* and *Washington*.

DELAYS IN SHIP CONSTRUCTION NOT ALWAYS DUE TO ARMOR.

The impression prevails generally that the cause of delay in the completion of armored vessels is primarily due to the non-delivery of armor, and while undoubtedly there have been occasions of this kind in the past, such is not always the case now.

Delays in the first instance were due to the fact that the manufacture of armor in the United States was a new industry, and its development took place so rapidly that in order to keep pace with it and supply the best quality of armor it became necessary to direct certain changes in the process of manufacture, such, for example, as the introduction of the face-hardening and reforging processes, and the use of nickel, which entailed considerable delay in delivery.

In later years the development of the Krupp process, and the time consumed by Congress in settling the question of the cost of improved armor, led to delays beyond the control of the Bureau.

The hulls and machinery of battle ships *Kearsarge* and *Kentucky* were contracted for in January, 1896, and their armor was contracted for in June, 1896; that is, six months later.

These vessels were completed in February and May, 1900. The last armor plate for the *Kearsarge* was delivered at the shipyard May 20, 1899, but was not placed on the ship until October 23, 1899; that is, five months after its receipt and four months before the final completion of the vessel. The last plate for the *Kentucky* was delivered June 10, 1899, but was not placed on the vessel until January 4, 1900, nearly seven months after its receipt and four months before the final completion of the vessel.

Hence it will be observed that it was not lack of armor that delayed these vessels.

The hulls and machinery of battle ships *Alabama*, *Illinois*, and *Wisconsin* were contracted for in September, 1896, but their armor was not contracted for until June, 1898, that is, twenty months later, this delay being due to the action of Congress with regard to the cost of armor. The *Alabama* was completed in October, 1900, her last armor plate having been delivered June 4, 1900, and being placed on the vessel August 17, 1900. The *Illinois* was completed in September, 1901, her last armor plate having been delivered August 31, 1900, that is, a year before the final completion of the vessel, and it was placed on the vessel October 31, 1900, ten months before the vessel was in all respects completed. The *Wisconsin* was completed in February, 1901, her last armor plate having been delivered June 30, 1900, eight months before the completion of the vessel in other respects.

Hence it will be seen that the final completion of these ships was not delayed on account of the non-delivery of armor, though it is claimed that in the case of the *Alabama* her final completion was delayed on that account.

With regard to the harbor-defense monitors, the *Arkansas* is just completed, but her last armor plate was delivered June 28, 1901, fifteen months ago. The *Florida* is reported as 94 per cent completed. Her last armor plate was delivered November 30, 1901, ten months ago. The *Nevada* is reported as 98 per cent completed. Her last armor plate was delivered May 23, 1901, sixteen months ago. The *Wyoming* is reported as 95 per cent completed. Her last armor plate was delivered March 2, 1901, eighteen months ago.

Hence it will be seen that these vessels were not delayed for want of armor.

The contracts for the hulls and machinery of battle ships *Maine*, *Missouri*, and *Ohio* were made in October, 1898, and the contracts for their armor was made in November, 1900, about twenty-five months later, this long delay being due to the attitude of Congress concerning the armor question. Notwithstanding this delay, the last armor plate for the *Maine* was delivered at the shipyard early in June last, and the vessel is not yet completed in other respects, showing that her final completion is not delayed on account of the non-receipt of armor. All the armor for the *Missouri* and *Ohio* has been delivered with the exception of the shutter plates, and yet these vessels are but 74 and 64 per cent completed, respectively, showing that they are not delayed for lack of armor.

The hulls and machinery of 5 battle ships of the *Virginia* class, 6 armored cruisers of the *Pennsylvania* class, and 3 protected cruisers

of the *St. Louis* class were contracted for in January, February, and March, 1901; their armor was contracted for in November, 1900, two to four months prior to the dates of the hull and machinery contracts, and deliveries under the armor contracts have exceeded the contract requirements, and the manufacturers have increased their plants to insure a still greater output.

The first shipment of armor for battle ship *Nebraska* has just been made, though her keel was only laid a few months ago, and the vessel is reported as but 9 per cent completed.

Considerable more armor could have been delivered under these contracts had it been possible to get the armor drawings from the shipbuilders, to whom frequent application has been made therefor.

The last vessels above referred to were contracted for eighteen to twenty months ago, and in some instances no armor drawings have yet been received, and in others only those for a trifling quantity, and if it should turn out that delay in the completion of those vessels is finally due to non-delivery of armor, the contractors will be responsible therefor rather than the Bureau or the armor manufacturers.

From the foregoing it will be seen that notwithstanding the many embarrassments and vexatious delays with which the Bureau has had to contend, due to causes beyond its control, the armor situation is by no means as discouraging as is by many supposed, and now that large contracts are outstanding and the manufacture of armor is running smoothly, there is little to be apprehended, except that the present delay in receiving drawings will result in a large number coming in all together at a later period, when it may be difficult, if not impracticable, to meet the requirements of the shipbuilders.

All the armor required for ships authorized, except about 11,500 tons for those authorized at the last session of Congress, has been contracted for, and contracts will soon be made for the balance.

The following table shows the status of all armor contracts made by the Bureau to date:

Ship and

Name of vessel.	Act of authorization.	Date of contract for hull and machinery.	Contractor.	Keel laid.
Amphitrite	[a] Mar. 3, 1885		Harlan & Hollingsworth	1874
Monadnock	[a] Aug. 3, 1886		Continental Iron Works	1875
Terror	[a] Mar. 3, 1887		Cramp & Sons	1874
Puritan			John Roach	1875
Texas	Aug. 3, 1886		Norfolk Navy-Yard	June 1, 1889
Maine (old)	do		New York Navy-Yard	Oct., 1888
Monterey	Mar. 3, 1887	June 14, 1889	Union Iron Works	July —, 1889
Katahdin	Mar. 2, 1889	Jan. 28, 1891	Bath Iron Works	July —, 1891
New York	Sept. 7, 1888	Aug. 28, 1890	Cramp & Sons	Sept. 30, 1890
Brooklyn	July 19, 1892	Feb. 11, 1893	do	Aug. 2, 1893
Oregon	June 30, 1890	Nov. 19, 1890	Union Iron Works	Nov. 19, 1891
Massachusetts	do	Nov. 18, 1890	Cramp & Sons	June 25, 1891
Indiana	do	Nov. 19, 1890	do	May 7, 1891
Iowa	July 19, 1892	Feb. 11, 1893	do	Aug. 5, 1893
Kearsarge	Mar. 2, 1895	Jan. 2, 1896	Newport News Co	Jan. 30, 1896
Kentucky	do	do	do	do
Alabama	June 10, 1896	Sept. 24, 1896	Cramp & Sons	Dec. 1, 1896
Illinois	do	Sept. 26, 1896	Newport News Co	Feb. 10, 1897
Wisconsin	do	Sept. 19, 1896	Union Iron Works	Feb. 9, 1897
Maine (new)	May 4, 1898	Oct. 1, 1898	Cramp & Sons	Feb. 15, 1899
Ohio	do	Oct. 5, 1898	Union Iron Works	May 19, 1899
Missouri	do	Oct. 11, 1898	Newport News Co	Feb. 7, 1900
Arkansas	do	do	do	Nov. 14, 1899
Connecticut	do	Oct. 19, 1898	Bath Iron Works	Apr. 17, 1899
Florida	do	Oct. 11, 1898	Lewis Nixon	Jan. 23, 1899
Wyoming	do	Oct. 5, 1898	Union Iron Works	Apr. 11, 1899
Virginia	Mar. 3, 1899	Feb. 15, 1901	Newport News Co	May 21, 1902
Nebraska	do	Mar. 7, 1901	Moran Bros. Co	July 1, 1902
Georgia	do	Feb. 18, 1901	Bath Iron Works	Aug. 31, 1901
Pennsylvania	do	Jan. 10, 1901	Cramp & Sons	Aug. 7, 1901
West Virginia	do	Jan. 24, 1901	Newport News Co	Sept. 16, 1901
California	do	Jan. 10, 1901	Union Iron Works	Not laid
New Jersey	June 7, 1900	Feb. 15, 1901	Fore River S. & E. Co	Apr. 2, 1902
Rhode Island	do	do	do	May 1, 1902
Colorado	do	Jan. 10, 1901	Cramp & Sons	Apr. 25, 1901
Maryland	do	Jan. 24, 1901	Newport News Co	Oct. 29, 1901
South Dakota	do	Jan. 10, 1901	Union Iron Works	Not laid
St. Louis	do	Mar. 11, 1901	Neafie & Levy	July 31, 1902
Milwaukee	do	Apr. 17, 1901	Union Iron Works	July 30, 1902
Charleston	do	Mar. 30, 1901	Newport News Co	Jan. 30, 1902
Connecticut	July 1, 1902		New York Navy-Yard	Not laid
Louisiana	do	Oct. 18, 1902	Newport News Co	do
Tennessee	do	Contract not yet made.		
Washington	do			
Total armor contracted for.				

[a] Date of acts authorizing completion.

[b] Months previous to date of contract for ship.

armor contracts.

Date of contract, completion.	Date of act authorizing armor.	Limit of, or average cost of, armor per ton.	Date of armor contract.	Armor contracted for.	Armor contractor.	Elapsed time between contract of ship and of armor.
				Tons.		*Months.*
.....	Mar. 3, 1887	$604.85	June 1, 1887	237.17	Bethlehem	3
		574.00	Nov. 20, 1890	426.98	Carnegie	32
.....	.....do.....	574.00	.....do.....	161.34	.....do.....	3
				513.62		32
.....	.....do.....	574.00	.....do.....	628.61	.....do.....	32
.....	.....do.....	604.85	June 1, 1887	1,126.46	Bethlehem	3
.....	.....do.....	604.85	.....do.....	1,064.77	.....do.....	10
.....	.....do.....	604.85	.....do.....	1,221	.....do.....	10
June 14, 1892	.....do.....	604.85	June 1, 1887	174.26	.....do.....	24
		574.00	Nov. 20, 1890	531.97	Carnegie	17
July 28, 1892	June 30, 1890	574.00	.....do.....	775.07	.....do.....	*b* 2
Jan. 1, 1893	Sept. 7, 1888	574.00	.....do.....	517.46	.....do.....	3
Feb. 11, 1896	July 19, 1892	671.13	Feb. 28, 1893	661.29	.....do.....	.....
		646.41	Mar. 1, 1893	40.73	Bethlehem	.....
Nov. 19, 1893	Mar. 2, 1891	646.41	.....do.....	899.74	.....do.....	27
		574.00	Nov. 20, 1890	1,866.80	Carnegie	.....
		604.85	June 1, 1887	2,191.25	Bethlehem	27
		646.41	Mar. 1, 1893			
Nov. 18, 1893	.....do.....	574.00	Nov. 20, 1890	582.28	Carnegie	27
		671.13	Feb. 28, 1893			
		604.85	June 1, 1887	2,316.53		27
Nov. 19, 1893	.....do.....	646.41	Mar. 1, 1893		.....do.....	
		574.00	Nov. 20, 1890	429.62		27
		671.13	Feb. 28, 1893			
Feb. 11, 1896	July 19, 1892	671.13	Feb. 28, 1893	1,811.54	Carnegie	.....
		646.41	Mar. 1, 1893	791.63	Bethlehem	.....
Mar. 24, 1898	Mar. 2, 1895	547.96	June 1, 1896	2,830	.....do.....	6
.....do.....	.....do.....	552.50	.....do.....	2,830	Carnegie	6
Sept. 24, 1899	May 4, 1898	*c* 400.00	June 9, 1898	2,559	Bethlehem	$20\frac{1}{6}$
Sept. 26, 1899	.....do.....	*c* 400.00	June 3, 1898	1,406	.....do.....	$20\frac{1}{6}$
			June 9, 1898	1,153	Carnegie	$20\frac{1}{6}$
Sept. 19, 1899	.....do.....	*c* 400.00	June 3, 1898	2,559	.....do.....	$20\frac{1}{2}$
June 1, 1901	Mar. 3, 1899	*c* 400.00	Nov. 28, 1900	2,451	Bethlehem	26
		c 420.00				
June 5, 1901	.....do.....	*c* 400.00	Nov. 26, 1900	1,225	Carnegie	26
		c 420.00	Nov. 28, 1900	1,225	Bethlehem	
June 11, 1901	.....do.....	*c* 400.00	Nov. 26, 1900	2,451	Carnegie	26
		c 420.00				
Mar. 11, 1901	.....do.....	*c* 400.00	Aug. 30, 1899	538	.....do.....	10
Jan. 19, 1901	.....do.....	*c* 400.00	.....do.....	538	.....do.....	10
Oct. 11, 1900	.....do.....	*c* 400.00	Oct. 4, 1899	541.44	Bethlehem	12
Jan. 5, 1901	.....do.....	*c* 400.00	.....do.....	541.44	.....do.....	12
Feb. 15, 1904	.....do.....	*c* $400 for harveyized armor. *c* $420 for Krupp armor.	Nov. 26, 1900	3,332	Carnegie	*b* 2
Mar. 7, 1904	.....do.....		Nov. 28, 1900	3,332	Bethlehem	*b* 3
Feb. 18, 1904	.....do.....		.....do.....	3,332	.....do.....	*b* 2
Jan. 10, 1904	.....do.....		.....do.....	1,900	.....do.....	*b* 1
Jan. 24, 1904	.....do.....		.....do.....	950	.....do.....	1
			Nov. 26, 1900	950	Carnegie	*b* 1
Jan. 10, 1904	.....do.....		.....do.....	1,900	.....do.....	*b* 1
Feb. 15, 1904	June 7, 1900		.....do.....	3,332	.....do.....	*b* 2
.....do.....	.....do.....		.....do.....	3,332	.....do.....	*b* 2
Jan. 10, 1904	.....do.....		Nov. 28, 1900	1,900	Bethlehem	*b* 1
Jan. 24, 1904	.....do.....		.....do.....	950	.....do.....	*b* 1
			Nov. 26, 1900	950	Carnegie	*b* 1
Jan. 10, 1904	.....do.....		.....do.....	1,900	.....do.....	*b* 1
Mar. 11, 1904	.....do.....		Nov. 28, 1900	371	Bethlehem	.....
			Nov. 26, 1900	371	Carnegie	*b* 3
Apr. 17, 1904	.....do.....		Nov. 28, 1900	743	Bethlehem	*b* 4
Mar. 30, 1904	.....do.....		Nov. 26, 1900	743	Carnegie	*b* 4
Mar. 18, 1906	.....	.....	Armor not contracted for.	.....	.....	.....
.....	.....	.....		.....	.....	.....
.....	.....	.....		.....	.....	.....
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c Does not include royalties.

POWDER.

With the exception of ignition and shell powder, no black or other than smokeless powder has been purchased or manufactured for the Navy since the Spanish-American war. All new ships, beginning with the *Kearsarge* and *Kentucky*, have been supplied with outfits of smokeless powder, and, in addition, some thirty of the older vessels have been thus supplied.

The manufacture of smokeless powder during the past year has progressed in a satisfactory manner, so far as quality is concerned, but not so much so as to the amount delivered, as a large quantity has been required both for new and old ships, not only in the way of original outfits but to make good the annual consumption due to target practice which amounts in the aggregate to a very large quantity. Efforts have, however, been made to secure more rapid delivery, and it is expected that the Bureau's requirements in this respect will be satisfactorily met hereafter.

The reports of inspections and tests of smokeless powder during the year from ships and from powder magazines have been favorable, and no unstable powders have been detected, except a small lot of 3-inch powder at Norfolk.

Numerous retests of powder of earlier date of manufacture have been made for the purpose of determining whether it had undergone any chemical change or if its ballistic properties had changed. It may be definitely stated that, so far as stability is concerned, the results have been of a most satisfactory character, and with few exceptions the ballistic properties of the powders have practically remained unchanged. In a few instances the powder has become drier, and in consequence quicker; but in one instance only did a retested sample of service powder show what might be considered an undue increase in pressure, and this was unquestionably due to the fact that after the weight of charge had been fixed the powder dried out somewhat before it was put up for issue. All smokeless powder is now dried to a proper degree and is then immediately packed in air-tight, zinc-lined cases, in order that it may retain practically the same amount of volatiles. It is not unlikely that, by some improved process of drying, practically all the volatiles can be removed from smokeless powder, and then when tested it will be in its most efficient condition; and should it thereafter take up a slight percentage of moisture, it would become less violent; that is, slower; but it must still be kept as dry as possible, for a too slow powder might endanger the muzzle of the gun.

Numerous experiments have been conducted at Indian Head with a view to establishing a reduced charge of smokeless powder for large-caliber guns, for use in target practice, not only on the score of economy in the expenditure of powder, but to save the wear and tear on the guns and mounts. The results thus far are not entirely satisfactory, for as the weight of the charge is reduced the ratio of weight of powder for muzzle energy produced increases. This is not, however, of much importance if uniform velocities can be obtained with reduced charges.

A number of experiments have been made at Indian Head with a view to determining the best and most expeditious method of drying smokeless powder and of the effect of such method upon the powder. It is most important that the process of drying should be

done as quickly as is practicable, provided it does not injuriously affect the quality of the powder, for by the method at present employed the larger sizes must remain many weeks in the dry house, thus retarding delivery and jeopardizing a large amount of capital and requiring very large drying facilities. A system of water drying has been tried which greatly reduces the length of time, but it remains to be seen whether powder thus treated is as satisfactory as when dried by the ordinary process. Other methods have been proposed which seem likely to be attended with favorable results, and continued investigation and experiment will be made with a view to a final and satisfactory solution of this important question.

Interesting experiments have been made with a view to determining the feasibility of imparting some coloring matter to smokeless powder during the process of manufacture, which would indicate by a change, or by losing its color whether the powder was undergoing dangerous decomposition. With this end in view, samples of powder colored with rosaniline, which imparts a deep carmine color to it, have been made. When subjected to undue heat for a sufficient period to cause decomposition, the powder thus treated has lost its color, retaining it while in normal condition. It may be that some such method can be used, which would aid in detecting decomposing powders.

Important changes have been made in the method of determining the volatiles in smokeless powder, which may also furnish a means of eliminating all outside influences in making stability tests.

The quality of smokeless powder manufactured during the year is decidedly superior to that previously manufactured, due to the more thorough purification of the "pyro" entering into its composition, the greater rigidity of the acceptance tests, and to a better knowledge and more accurate determination of the best size and shape of the grain and the thickness of wall for each caliber. These results are largely due to the fact that the possession of a powder plant has rendered it possible to carry on investigations which would otherwise have been practically impossible.

The adoption of black prismatic in place of fine-grain black powder for ignition charges has been attended with very satisfactory results, a much less weight of powder being required when prismatic powder is used. The smoke due to the ignition charge is hardly perceptible.

In the case of the 12-inch, 40-caliber guns the ignition charge has been reduced from 14 pounds of fine-grain black powder to 2¾ pounds of black prismatic. In the case of 6-inch guns three prisms of black powder form an efficient ignition charge, and in 4-inch guns one prism. Special forms of pressed black powder for use in guns using brass cartridge cases have been made for experiment.

Notwithstanding the utmost care in the manufacture and packing of smokeless powder and of determining the proper charge for a given muzzle velocity, it is almost certain that slight changes in its ballistic properties will from time to time be observed, due to changes of temperature alone.

The Bureau is making arrangements to redry and repack all smokeless powder now in store and will fix new charges for each index after drying.

Attention is invited to the interesting report, to be found in the Appendix, of Lieut. C. M. McCormick, U. S. Navy, the inspector of powder in the Eastern States, to whom the Bureau is very much

indebted for the zeal with which he has performed his duties and for his intelligent efforts to improve the methods of manufacture and inspection of smokeless powders.

PROJECTILES.

The Bureau has a large store of projectiles on hand, of earlier type, designed when lower chamber pressures were in vogue. In consequence, those having particularly thin walls have been withdrawn from service, as it is feared they might break up in the guns.

The most interesting event during the year in connection with projectiles is the development by the Firth-Sterling Steel Company of a new type of shell combining the advantages of the armor-piercing with the common shell; that is, having the perforating power of the regular armor-piercing projectile with the capacity for a large bursting charge. The requirements for these shell on test are that at a prescribed velocity they shall completely perforate, unbroken, a plate of hard-faced armor a caliber in thickness and then be in condition for effective bursting. A number of shells of this description have been ordered, and several lots have successfully fulfilled the requirements. These shell are fitted with soft caps.

SIGHTS.

Several new sights have been designed, and a number are being made for trial.

Over one hundred telescopic sights have had their cross-wire changed, two being substituted for the three originally used, much finer wires being used than formerly.

Sliding-leaf attachments for deflection have been provided in the case of sights recently made, both for open and for telescopic sights.

Telescopes of different power have been ordered, both high and low, for comparative test, and should it be found desirable to supply both, the Bureau is prepared to do so.

All new guns of and above 4 inches in caliber are now supplied with sights on both sides, and also guns of older manufacture as opportunity offers.

RANGE FINDERS.

No thoroughly satisfactory range finder for use on board ship at sea has been brought to the Bureau's notice, though a considerable number of designs have been submitted by inventors, most of which, however, were so crude that they gave no promise of utility.

A prismatic instrument, designed by Messrs. Searles and Saegmuller, for determining the distance of an object from an elevation when the horizon is visible, has been submitted and is now under consideration.

A Barr and Stroud range finder has been in use on board the *Albany* for the past year, it has been favorably reported on, and a number of similar ones have been ordered from the manufacturers.

Two Zeiss stereoscopic range finders have recently been received, and are now being tested, and are favorably regarded.

Lieut. Cleland Davis, U. S. Navy, has designed a range finder for use on shore, and an experimental one has been made by the Army for test.

The vertical range finder referred to in the Bureau's last report,

while correct in principle, proved to be unsatisfactory in some respects for use on board ship.

A new type of Fiske range finder has been installed on board the *Cincinnati* for test, it is apparently correct in principle, but the location of the observation towers is not entirely satisfactory.

FUZES AND PRIMERS.

Several new designs of base percussion fuzes have been made and tested, some have given excellent results, while others have proved unsatisfactory; the same may be said with regard to primers, but it is believed that a satisfactory combination electric and percussion primer for B. L. and R. F. guns and a safe and reliable base percussion fuze has been developed.

An ingenious device called a "tracer" has been submitted to and experimented with by the Bureau. It consists of a burning composition incased in the rear end of the base-fuze stock, which is lighted after the projectile leaves the muzzle of the gun, the idea being to follow with the eye the flight of small projectiles fired at night.

The device has worked admirably at the proving ground, and a number of one-pounder shells so fitted have been sent to one of the battle ships for further experiment and to see what the effect will be when they are fired in the beam of a searchlight.

GAS CHECKS.

While the plastic pad and split rings used as gas checks in our naval guns have given good results in general, occasions occur from time to time when the pads get cut, are burned, or become partially squeezed out, resulting in the sticking of the plug and consequent delay in opening the breech and replacing the pad. Efforts are being made to overcome such occurrences, or at least to reduce them to a minimum, and some experimental pads are now being tested which were subjected to considerably greater pressure than was formerly used in the process of manufacture in the hope that they will prove to be an improvement upon those now in use. When guns become heated from rapid firing, the pads will soften, and in such condition are liable to give trouble.

Whatever disadvantage brass cartridge cases may have, they certainly have the advantage of effectively checking the gas and obviating the sticking and jamming of breech plugs, and the German system which makes use of the brass case for guns of all calibers, even to the largest, has decided advantages over any other in these particulars. Such cases, however, could not be used with our latest type of guns above those of 4 inches in caliber, as they all have enlarged powder chambers with openings of reduced diameter. Moreover, the weight and bulk of a charge of navy smokeless powder is so much greater than that used in the German guns that the brass cases, were it possible to use them, would be so long and unwieldy that it would be almost impracticable to handle them.

The metallic gas check used in all French naval guns above those of 6 inches in caliber, similar to the old Broadwell ring, has many advantages, and the Bureau is having a 6-inch B. L. rifle fitted with such a device for trial.

TORPEDOES.

No new torpedoes have been manufactured for the Bureau during the past year.

Torpedo tubes for under-water discharge have been installed on board the *Maine*, and others for the *Ohio* and *Missouri* have been shipped to the builders' yards.

The torpedo armament for all torpedo boats and destroyers authorized has been provided for.

Experimental torpedoes, quite different in many important features from those now in service, have been designed and will soon be tested.

Experiments for the Bureau have been made with various forms of torpedoes by the Bureau of Construction and Repair in its model basin, to determine the relative value of each.

Further tests with adjustable gyroscopic steering devices in torpedoes have been made, with excellent results.

A number of electrically driven air compressors have been completed and thus far have given satisfaction.

During the past year electric firing devices have been installed in all new torpedo vessels, which seem to fully meet all requirements.

SMALL ARMS.

There are now in service fifteen thousand 6-millimeter, or caliber .236, rifles, and 16,720 United States magazine rifles, caliber .30, the latter being the army standard.

It is manifestly improper and prejudicial to the interests of the Navy that such a condition should continue, and the Bureau therefore recommends that the 6-millimeter rifles be retired from service as soon as practicable and be replaced by others of the caliber used by the Army.

In December, 1898, a joint board of army, navy, and marine officers, on the recommendation of the Bureau, was convened to consider the question of the adoption of a uniform caliber for small arms and machine guns, and of a standard and uniform small-arm cartridge for the use of the Army, Navy, and Marine Corps. Said board reported that the same caliber should be adopted for these services, and that the Navy and Marine Corps should use the same caliber rifle and ammunition as is used by the Army. Since that date all new small arms purchased for the Navy have been of caliber .30—the same as used by the Army—but it has not been possible to replace the 6-millimeter rifles out of current appropriations. Reports from commanders in chief and commanders of vessels are frequently received requesting that the vessels under their command be supplied with the United States magazine, caliber .30, rifle; and the commander in chief of the United States naval force on the Asiatic Station has written in the strongest terms in support of such a measure, largely on the ground that the 6-millimeter rifle is less reliable in service than the United States magazine rifle used by the Army.

The Bureau therefore recommends that an appropriation of $300,000 be requested for this purpose and $200,000 for ammunition therefor. This measure is considered as of great importance, but it can only be carried out by means of a special appropriation.

CONVERSION OF 6-INCH GUNS.

Ninety-five 6-inch 30-caliber B. L. guns have thus far been converted to rapid-firing guns, leaving 27 of this class yet to be converted. About 19 guns a year for the past five years have been converted at an average cost of $1,315 each.

The sum of $125,000 has thus far been appropriated for this purpose and about $35,000 more will be required, and the work should be continued until all guns of this class are converted.

ELECTRIC AUXILIARIES.

The use of electric power for operating turret and other ammunition-hoist motors, elevating gear and rammers for heavy guns, and turret-turning machinery gives great satisfaction and is believed to be better adapted for the purpose than any other system. It has now been in use on several important vessels for a number of years and its efficiency has been fully demonstrated.

The Bureau of Construction and Repair has designed for the battle ships and large cruisers now building horizontal ammunition conveyors, operated by electric power, the first one having already had a satisfactory preliminary test, and there is good reason for believing that the device will prove entirely satisfactory and be of great utility.

BATTERIES OF VESSELS.

Batteries have been mounted since the date of the last report on the following vessels:

Albay.	Dahlgren.	Montgomery.	Siren.
Abarenda.	Decatur.	Olympia.	Somers.
Arkansas.	Detroit.	Panther.	Sterling.
Calamianes.	Du Pont.	Porter.	Terror.
Cincinnati.	Foote.	Rainbow.	Wasp.
Columbia.	Illinois.	Samar.	Wheeling.
Craven.	Mayflower.	San Francisco.	Winslow.
Cushing.	Minneapolis.	Scorpion.	

Batteries have been landed since the date of the last report on the following vessels:

Abarenda.	Cushing.	Mayflower.	Porter.
Amphitrite.	Du Pont.	Minnesota.	Rodgers.
Bancroft.	Foote.	Mindoro.	Samar.
Bailey.	Gardoqui.	Newark.	Scorpion.
Bennington.	Leyte.	Pampanga.	Siren.
Castine.	Manila.	Petrel.	Wasp.
Concord.			

THE DEVELOPMENT OF ARTILLERY.

The remarkable increase which of late years has been made in the energy of guns, due to changes in their dimensions and to the introduction of improved explosive agents for propellants, can best be illustrated by two examples.

A few years ago the 6-inch gun was 30 calibers in length and weighed 4.8 tons; its muzzle velocity was 2,000 foot-seconds (using brown powder and a 100-pound projectile), its corresponding muzzle energy was 2,773 foot-tons, and its practicable rate of fire was 2½ aimed shots a minute; its muzzle energy per minute was therefore 6,932 foot-tons.

The latest type of 6-inch gun is 50 calibers in length and weighs 8.2 tons; its muzzle velocity (using smokeless powder and a 100-pound projectile) is 2,900 foot-seconds, and its corresponding muzzle energy is 5,836 foot-tons; its practicable rate of fire is 8 aimed shots a minute, and its muzzle energy per minute, therefore, is 46,688 foot-tons, or more than 600 per cent greater energy per minute than the 30-caliber gun using brown powder. The muzzle energy of one round of the present gun, using smokeless powder, is 3,063 foot-tons greater than that of the old gun, using brown powder, an increase of 109 per cent.

It is not claimed that 8 aimed shots per minute can be fired from the 6-inch gun except for brief periods, but such a rate of fire has been attained and 9 hits have been made in one minute at record practice by a foreign vessel, and it is hoped that the time is not far distant when it will be done by our own.

The earlier 12-inch guns were 35 calibers in length and weighed 45.2 tons. They had a muzzle velocity of 2,100 foot-seconds (using brown powder and an 850-pound projectile), with a corresponding muzzle energy of 25,985 foot-tons. The latest type of 12-inch gun is 40 calibers in length and weigh 52 tons. Its muzzle velocity is 2,800 foot-seconds (using smokeless powder and an 850-pound projectile), and its corresponding muzzle energy is 46,246 foot-tons, an increase of muzzle energy over that of the earlier guns of 10,261 foot-tons, equal to 35½ per cent. It is not likely that any such advance will be made in the near future.

THE FUTURE OF ARTILLERY.

It is impossible to say at this time what the next important step will be in the development of artillery, but that a higher stage of efficiency will be reached may be considered certain.

Stronger guns, made of better material and by improved methods of construction, admitting of higher pressures, obtained, perhaps, with smaller charges and quicker powders, are among the possibilities and offer an interesting field for investigation.

While a chamber pressure of 15 tons per square inch was until recently considered the maximum pressure that could be safely allowed, we have now got up to 17 and 18 tons; and guns designed for a working pressure of 20 tons per square inch will soon follow.

There is no difficulty about designing such guns, except that they become unduly heavy and probably unduly long for ship use, and high pressures are very severe on the gas-checks, primers, and firing mechanism; but these features are sure to be modified to meet the required conditions, and the Bureau confidently expects to see guns of greater energy than even the latest now in use make their appearance ere long. The 12-inch 45-caliber guns just designed for the new battle ships of the *Louisiana* class can safely be fired with a chamber pressure of 19 tons to the square inch.

NEW BATTERIES FOR CERTAIN SHIPS.

The new armament of twelve 6-inch 45-caliber guns for the *Baltimore* is well advanced and will be completed in a few months. Funds having been made available, it is proposed to order a similar new armament for the *Newark*, and to provide batteries of ten 5-inch 50-caliber guns each for the *New Orleans* and *Albany* in place of their mixed batteries of foreign-built guns.

The Bureau recommends that funds be made available for supplying the *New York* with new guns in place of her present 4-inch guns, which are regarded by the Bureau as unsuitable for a vessel of her class. It is also recommended that the *Philadelphia* be supplied with a new armament of twelve 6-inch 45-caliber quick-firing guns on modern mounts in place of her present battery. Both of these vessels are good for many years' service, and it is therefore desirable to improve their offensive powers as far as is practicable.

GUNS PURCHASED.

Exclusive of minor caliber guns and machine guns of small-arm caliber, large numbers of which have been bought from private manufacturers, the following guns have been manufactured by contract for the Bureau: Four 8-inch, forty-nine 6-inch, twenty-two 5-inch, thirty-eight 4-inch, one hundred 3-inch, and fifty 3-inch field guns.

IMPROVEMENTS TO VESSELS.

The question of improving battle ships *Oregon*, *Indiana*, and *Massachusetts* by giving them electrically operated, balanced, 13-inch turrets in place of their present ones, and of otherwise improving them, has been under consideration on several occasions.

The Bureau is of the opinion that such changes would add materially to the efficiency of the vessels, and should be undertaken, to one at a time, when its services can be spared and it is in need of a general overhauling. A special appropriation under this Bureau would, however, be necessary for such purpose.

ARMAMENT AND ARMOR FOR NEW SHIPS.

Congress at its last session having authorized the construction of 2 battle ships of the *Louisiana* class of 16,000 tons displacement, 2 armored cruisers of the *Tennessee* class of 14,500 tons displacement, and 2 gunboats of the *Paducah* class of 1,000 tons displacement, the following is a summary of the batteries to be carried by the larger vessels:

BATTLE SHIPS OF THE LOUISIANA CLASS.

Twelve-inch 45-caliber guns		4
Eight-inch 45-caliber guns		8
Seven-inch 45-caliber R. F. guns		12
Three-inch 50-caliber R. F. guns (14-pounders)		20
Three-pounder semi-automatic guns		12
One-pounder heavy automatic guns		6
One-pounder heavy R. F. guns		2
Machine guns, caliber .30		2
Three-inch field guns		2
Automatic guns, caliber .30		6
Main battery	guns	24
Secondary battery	do	50
Total number of guns	do	74
Weight of armament	tons	918.54
Weight of ammunition and stores	do	617.36
Total ordnance	do	1,535.90

The 12-inch guns will be mounted in pairs in two electrically controlled, balanced, elliptical turrets on the center line, one forward and one aft, with an arc of fire of about 270 degrees.

The 8-inch guns will be mounted in pairs in four electrically controlled, balanced, elliptical turrets, two on each beam, at each end of the superstructure.

The 7-inch guns will be mounted on the gun-deck in broadside on pedestal mounts, the forward and after pairs being arranged to fire right ahead and right astern, respectively.

The guns of the secondary battery will be mounted in commanding positions, having as large an arc of unobstructed fire as possible.

The 7-inch guns will be isolated by means of nickel-steel bulkheads, from 1½ to 2 inches in thickness.

ARMORED CRUISERS OF THE TENNESSEE CLASS.

Ten-inch 45-caliber guns		4
Six-inch 50-caliber R. F. guns		16
Three-inch 50 caliber R. F. guns (14-pounders)		22
Three-pounder semi-automatic guns		12
One-pounder heavy automatic guns		2
One-pounder heavy R. F. guns		2
Machine guns, caliber .30		2
Three-inch field guns		2
Automatic guns, caliber .30		6
Main battery	guns	20
Secondary battery	do	48
Total number of guns	do	68
Weight of armament	tons	529.76
Weight of ammunition and stores	do	508.40
Total ordnance	do	1,038.16

The 10-inch guns will be mounted in pairs in two electrically controlled, balanced, elliptical turrets, on the center line, one forward and one aft, each having an arc of fire of about 270 degrees.

The 6-inch guns will be mounted as follows: Four on the main deck, in separate compartments, one being at each corner of the superstructure, 2 firing right ahead and 2 right astern. The remaining 12 guns will be mounted on the gun deck, 6 being placed well forward and 6 well aft, the forward and after pairs firing right ahead and right astern, respectively. All the 6-inch guns on the gun deck are in separate compartments, with nickel-steel bulkheads from 1½ to 2 inches in thickness.

The 3-inch guns will be mounted as follows: Twelve on the gun deck, 6 being in sponsons and 6 in broadside, and 10 on the main deck; all being behind 2-inch nickel-steel protection.

The smaller guns will be mounted on the bridges and in the military tops in the most commanding positions.

The armor scheme for the battle ships is as follows:

A complete water-line belt 9 feet 3 inches wide, having a maximum thickness of 11 inches for about 200 feet amidships. Forward and aft of this the maximum thickness is 9 inches abreast the magazine spaces, from which points it decreases gradually to 4 inches at the stem and stern.

The lower casemate armor extends fore and aft to the limits of the magazine spaces and from the top of the water-line belt to the lower

edge of the 7-inch gun ports on the main deck, and is 6 inches in thickness, the athwartship bulkheads at the ends of this casemate being 6 inches thick.

The casemate armor around the 7-inch guns on the gun deck is 7 inches in thickness and the splinter bulkheads are from 1½ to 2 inches thick.

The upper casemate athwartship armor is 7 inches thick. The 3-inch gun protection is of 2-inch nickel steel.

The 12-inch barbettes extend from the protective deck to about 4 feet above the main deck, and consist of 10-inch armor in front and 7½-inch in the rear above the gun deck. Between the gun deck and the protective deck these barbettes have a uniform thickness of 6 inches.

The 12-inch turrets will have front plates 12 inches thick, side and rear plates 8 inches thick, and top plates 2½ inches thick.

The 8-inch barbettes will be 6 inches thick in front and 4 inches in rear, with the upper ammunition tube 3¾ inches thick and lower tube 3 inches thick.

The 8-inch turrets will have front plates 6½ inches thick, rear and side plates 6 inches, and top plates 2 inches thick.

The conning tower and shield will each be 9 inches thick; the signal tower 6 inches thick.

An armored tube 36 inches in diameter and 6 inches thick throughout will extend from the base of the conning tower to the protective deck.

The total weight of the armor and bolts will be 3,576 tons, and of the teak backing, 118 tons; a total of 3,694 tons—equal to 23.08 per cent of the trial displacement of 16,000 tons.

In addition there will be a complete protective deck of nickel steel extending from stem to stern, one and one-half inches on the flat and three inches on the slopes.

The armor scheme for the armored cruisers will be as follows:

The hull will be protected by vertical strakes of armor about 18 feet in height extending from the lower edge of the protective deck to the gun-deck port sills. This armor will be of 5 inches in thickness abreast the machinery and magazine spaces, being stepped down to 3 inches at the extremities.

The casemate armor in front of the 6-inch guns on the gun and main decks will be 5 inches thick.

The 3-inch guns on the gun and main decks will be protected by 2 inches of nickel steel.

Athwartship armor of a uniform thickness of 5 inches will be fitted forward and aft from the protective to the gun and main decks.

The 10-inch barbettes will extend from the protective deck to about 5 feet above the main deck, and will be of 7-inch armor in front and 4-inch in rear, above the gun deck. Between the gun deck and the protective deck they will be of a uniform thickness of 4 inches.

The 10-inch turrets will have front plates of 9 inches in thickness, side plates of 7 inches, rear plates of 5 inches, and top plates of 2½ inches.

The conning tower and shield will each be 9 inches thick; the signal tower 5 inches thick.

An armored tube 36 inches in diameter and 5 inches thick will extend from the base of the conning tower to the protective deck.

The total weight of the armor will approximate 2,224.08 tons, and the bolts and backing 124.16 tons; a total of 2,348.24 tons—equal to 16.19 per cent of the displacement of 14,500 tons.

In addition there will be a complete protective deck of nickel steel, extending from stem to stern, 4 inches in thickness on the slopes and one and one-half inches on the flat, except at the extremities of the vessel, where it will have a uniform thickness of 3 inches.

All the heavy armor—that is, of and above 6 inches in thickness—will probably be that known as Krupp nickel chrome, the thinner plates being Harveyed or Krupp non-cemented armor.

SPEED VERSUS ARMOR AND ARMAMENT.

The relative importance of speed, armor, and armament in vessels of the more important types is a question concerning which the best authorities differ to a greater or less extent, for while it is generally conceded that the so-called armored cruiser should be more speedy than the battle ship, opinions are at variance as to the relation of speed to the other elements in the respective types of vessels.

It may be conceded, however, that in both types the highest attainable speed is desirable, provided it be not obtained at too great a sacrifice of other important qualities. All nations are afflicted with the speed craze at intervals, and this country is no exception, and unless each batch of new vessels can equal or beat the world's record they are usually characterized as failures, and in deference to public sentiment the tendency is to design vessels of the highest possible speed, irrespective of the uses for which they are intended, and in consequence enormous sums of money have been expended by several countries in producing large and fast vessels which have but trifling value for fighting purposes, and to-day it requires no little moral courage on the part of designers to subordinate the popular element of speed to other qualities, no matter how important the latter may be.

At the present time our latest designs of battle ships and armored cruisers call for vessels of 18 and 22 knots speed on trial, respectively, whereas the latest foreign vessels of corresponding class are designed for 19 and 23 knots speed, respectively, and it will not be out of place, therefore, to explain briefly the cause of this seeming deficiency in our latest vessels.

It has always been the policy of the United States to provide its vessels of all classes with great battery power; that is, to so arm them that they shall be superior to foreign vessels of equal class in that respect, and that sentiment still prevails; and while we have, in a few instances, subordinated all other elements to speed, it is not likely to occur again, the consensus of opinion at the present time being in favor of applying large percentages of weight for armor and armament rather than to assigning it for the purpose of attaining the last possible fraction of a knot of speed.

In the case of the battle ships of the *Louisiana* class, of 16,000 tons trial displacement, 945 tons is given to armament and 394 tons to two-thirds of the ammunition supply carried on trial; that is, 1,339 tons, equal to 8.36 per cent of the trial displacement, is assigned for ordnance purposes, and 3,927 tons is assigned to protection, which includes all the armor proper, 155 tons of bolts and nuts, and 28 tons of cellulose, but does not include the protective deck and splinter bulkheads, which are included in the weight of the

hull. The above protection is equal to 24½ per cent of the trial displacement; consequently, in these vessels, 5,266 tons, equal to 32.86 per cent of their trial displacement, is allowed for armor, armament, and two-thirds of the ammunition, the vessels carrying all the other usual weights and 900 tons of coal on trial. To have increased the speed of these vessels 1 knot, that is, to 19 knots, would have necessitated an increase of about 2,800 indicated horsepower, with an approximate increase of weight of machinery of 255 tons, which would have to be taken from armament or armor, or both, as it could not well be taken from any other objects. This weight is greater than that of eight 8-inch guns and mounts, which weigh 235.5 tons, and is equal to the weight of ten 7-inch guns and mounts; hence it will be seen how great a sacrifice of armament would be necessary if the weight for the extra horsepower was obtained from this source. If it was taken from armor it would reduce it to the extent of 6½ per cent, or more than the weight of two 12-inch turrets, which weigh 236 tons.

This extra knot of speed, while perhaps very desirable, as it is represented by engine and boiler power, would never be realized except on the vessels' speed trials, and in any event would disappear a few months after the ships were docked, cleaned, and painted; whereas the guns and armor will remain as long as the vessels endure; consequently it has been deemed preferable to have them 18-knot vessels, with great powers of offense and defense, rather than 19-knot ships with a sacrifice of both.

With regard to the armored cruisers of the *Tennessee* class, of 14,500 tons trial displacement, a speed of 22 knots has been deemed sufficient, as the weight of machinery necessary to drive them another knot would exceed that of four 10-inch guns, mounts, and turrets, which weigh 379 tons, and even an extra quarter of a knot would represent the weight of over 2 inches on the protective deck.

These vessels are intended for fighting and not for scouting, and therefore it is necessary that they should carry every ton of armor and armament compatible with reasonably high speed and good coal supply. They may not improperly be termed fast battleships, for what they lack in armor and armament they make up in speed. The great increase in the number and power of guns of the intermediate and secondary classes carried by the latest types of vessels renders it extremely important that all ships intended for or liable to be placed in the battle line should have as much armor protection as possible.

In the armored cruisers of the *Pennsylvania* class of 13,680 tons trial displacement, 5.19 per cent of the displacement is allowed for the armament and two-thirds of the ammunition, and 14.78 per cent is allowed for armor, bolts, and backing, a total for armor and armament of 19.97 per cent of the trial diplacement; whereas in the armored cruisers of the *Tennessee* class of 14,500 tons trial displacement, 6.18 per cent of the displacement is allowed for the armament and two-thirds of the ammunition, and 16.19 per cent is allowed for armor, bolts, and backing, a total for armor and armament of 22.37 per cent of the trial displacement.

Hence the *Tennessee* is allowed ninety-nine one hundredths of 1 per cent more weight for armament than is the *Pennsylvania* and 1.41 per cent more weight for armor, or 2.40 per cent more for both, and in consequence, it is believed that the *Tennessee* class will be much more effective vessels than those of the *Pennsylvania* class.

No country can afford to build scouting vessels costing $7,000,000 each, which is approximately the cost of the cruisers of the *Tennessee* class, nor is it necessary that such large and heavily armed vessels be used for such purpose. A good many vessels have been practically ruined for military purposes by an excess of speed, but we have yet to hear of any being impaired by too much battery or protection.

The Bureau is convinced that no mistake has been made in the adjustment of the speed, armor, and armament of these vessels. The best vessel is not necessarily the one that can most quickly get in or out of battle, or keep out of battle, but is rather the one that can remain in battle the longest after she gets there.

It is safe to say that any vessels of this class, of equal displacement having a higher speed, are deficient in some of the other important qualities which these vessels possess.

* * * * * *

DETAILED ESTIMATES FOR THE FISCAL YEAR ENDING JUNE 30, 1904.

DEPARTMENT OF THE NAVY,
BUREAU OF ORDNANCE,
Washington, D. C., August 29, 1902.

SIR: 1. The Bureau has the honor to request authority to include in its annual estimates for the fiscal year ending June 30, 1904, under the head of "Salaries, Bureau of Ordnance," one ordnance engineer, mechanical draftsman and computer, at a salary of $3,000 per annum; and also under the head of "Civil establishment" at the Naval Gun Factory, a like position, at the same salary.

2. The necessity for a permanent civilian employee of superior attainments in the Bureau of Ordnance and at the Naval Gun Factory is very pressing. The Bureau is charged with the duty of designing guns, mounts, and turret fixtures, with all of their intricate details, upon the successful operation of which the efficiency of the Navy depends. Original work, requiring great ingenuity and a full knowledge of the higher mathematics, mechanics, ballistics, and other sciences, must be proceeded with as new ships are designed and contracted for, and improvements should be made as new types are brought out, and the older vessels should, as far as circumstances permit, be improved in their ordnance outfits as opportunity permits. All such work must originate at the Bureau and be perfected at the Naval Gun Factory, and for its performance the Bureau has been dependent upon the services of such officers of the Navy as it could procure by detail from time to time.

3. Very few officers possess the necessary attainments, and if the Bureau is fortunate enough to obtain the services of those who do, the exigencies of the service require that they shall perform their tour of sea duty whenever necessary. So far as many of the duties now performed by officers in the Bureau at the Naval Gun Factory are concerned, this is unimportant, and it is in fact desirable that there should be a constant rotation of duty, in order that as many officers as possible should acquire some knowledge of ordnance matters, but when it comes to the more important matters, such as the designing of guns and mounts, it cripples the Bureau seriously to lose the services of an

officer who is proficient in such matters. It takes fully a year before an officer possessing a decided aptitude and considerable knowledge of the subject can become of real value to the Bureau in the matters referred to, and it is becoming more difficult every year to obtain or retain the services of officers specially well qualified to perform certain duties pertaining to this Bureau, for which reason, and to avoid amateurish work in original designs, which can but lead to waste of money and valuable time, and to improve, as far as practicable, the ordnance outfits of the vessels of the Navy, both new and old, the Bureau has concluded, after mature deliberation, that the interests of the Department require the services of two good ordnance engineers, as above stated.

4. These employees should be graduates of technical schools and should possess a thorough knowledge of calculating strains and stresses in ordnance construction and fixing the proper dimensions of parts of guns, gun carriages, projectiles, etc., calculations in exterior and interior ballistics, mechanical drawing and designing, practical application of the sciences of electricity and optics, architecture of shop-building, installation, testing and superintending the operation of steam and electrically operated machinery to meet given conditions, etc., and a good general knowledge of modern ordnance.

5. Such persons are few in number, and in private life would command a much greater compensation than that recommended by the Bureau.

6. As the Department is aware, there is no ordnance corps in the Navy, but that all guns, mounts, and ordnance appliances now in use have been designed by such line officers as could be obtained who had an aptitude for and sufficient ability to perform such work, and it is only fair to say that the work has been well done. The duties of the Bureau have greatly increased in every respect, and officers have not the time, even supposing they have the talent, to devote to designing and to making long and intricate calculations, being occupied in the performance of the daily current work of the Bureau, which must be attended to every day. Many important matters with reference to mechanical details, worthy of long and careful consideration, often have to be summarily disposed of without it simply because there is no time and because the work must be proceeded with.

7. If the Department expects to get the best that can be procured, it must furnish the means, and the Bureau considers it a matter of primary importance that the positions recommended be allowed.

8. Authority is also requested to estimate under the head of "Civil establishment" for one foreman for smokeless powder factory at Indian Head, at $2,000 per annum. About 120 men are regularly employed at this establishment, which has a capacity of manufacturing 3,000 pounds of smokeless powder a day. The plant consists of 28 buildings, scattered over some 300 acres of land, many of the buildings being widely separated from each other.

9. The necessity for constant supervision and of competent superintendence is very pressing, not only as a measure of safety, but in order that the various processes of manufacture upon which the integrity of the powder depends may be faithfully carried on in the manner prescribed by the specifications. This work has heretofore been and is now being carried on by the officers attached to the proving ground, who give as much attention to the matter as their other duties, which

are very exacting, permit, but it is not possible for them to give it that constant attention which it requires. Moreover, the officers are continually changing, and the manufacture of smokeless powder is a study of itself and requires familiarity with a special branch of knowledge, which is by no means general.

10. A good, practical powder maker, who could give his whole attention to the work in question, is urgently needed, and the sum specified as compensation is the least at which the Bureau believes a competent person can be procured. This matter is considered as of primary importance.

Respectfully,

CHARLES O'NEIL,
Chief of Bureau of Ordnance.

The SECRETARY OF THE NAVY.

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REPORT OF THE CHIEF OF THE BUREAU OF CONSTRUCTION AND REPAIR.

DEPARTMENT OF THE NAVY,
BUREAU OF CONSTRUCTION AND REPAIR,
Washington, D. C., September 26, 1902.

SIR: In compliance with the Department's instructions, I have the honor to submit the report of the Bureau for the fiscal year ending June 30, 1902, and estimates for appropriations required for the fiscal year ending June 30, 1904.

The estimate marked "A" is for the salaries of certain clerical employees of the Bureau. An estimate for one additional clerk of class 3 is the only increase over the force as at present appropriated for.

The estimate marked "B" is for the construction and repair of vessels at navy-yards and on foreign stations, the purchase of stores, materials, machinery, tools of all kinds, and the proper performance of all general work for the Navy in the line of construction and repair. The demands upon this appropriation naturally increase in proportion to the growth of the Navy and the increased number of naval stations to be maintained.

The estimates marked "B. Special" are for the improvement of construction plants at the several navy-yards and naval stations, and are in amount barely sufficient to provide for the necessary modifications of existing plants to render them efficient and modern and to provide new installations already contemplated.

The estimate marked "B 1. Special" is for a steam ammunition lighter for use at Cavite, P. I., and is requested by the Bureau of Ordnance.

The estimates marked "C" are for the pay of the regular clerical force at the several navy-yards carried on the "Civil establishment."

The estimate marked "D" is for the amounts required by this Bureau under appropriation "Increase of the Navy, Construction and Machinery," for new vessels authorized by Congress to June 30, 1903.

The estimates marked "D. Special" are for vessels for the training service.

ESTIMATES, APPROPRIATION "CONSTRUCTION AND REPAIR," 1903-4.

Estimates of appropriations required for the fiscal year ending June 30, 1904, by the Bureau of Construction and Repair, Navy Department.

Detailed objects of expenditures and explanations.	Estimated amount required for each detailed object.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for current fiscal year ending June 30, 1903.
A. *Salaries.*			
1 chief clerk (appropriated)	$2,000.00		
2 clerks of class 3 (appropriated)	3,200.00		
1 clerk of class 3 (submitted)	1,600.00		
1 assistant draftsman (appropriated)	1,400.00		
2 clerks of class 1 (appropriated)	2,400.00		
1 assistant messenger (appropriated)	720.00		
1 laborer (appropriated)	660.00		
		$11,980.00	$10,380.00
B. *Construction and Repair of Vessels.*			
For preservation and completion of vessels on the stocks and in ordinary; purchase of materials and stores of all kinds; steam steerers, pneumatic steerers, steam capstans, steam windlasses, and all other auxiliaries; labor in navy-yards and on foreign stations; purchase of machinery and tools for use in shops; carrying on work of experimental model tank; designing naval vessels; construction and repair of yard craft, lighters, and barges for use at home stations; wear, tear, and repair of vessels afloat; general care, increase, and protection of the Navy in the line of construction and repair; incidental expenses, such as advertising, freight, foreign postage, telegrams, telephone service, photographing, books, professional magazines, plans, stationery, and instruments for drafting room (appropriated)	8,000,000.00	8,000,000.00	8,000,000.00
B. *Special.—Improvement of Construction Plants.*			
For repairs to and improvement of plant at navy-yard, Portsmouth, N. H. (appropriated)	20,000.00	20,000.00	30,000.00
For repairs to and improvement of plant at navy-yard, Boston, Mass. (appropriated)	50,000.00	50,000.00	50,000.00
For repairs to and improvement of plant at navy-yard, New York, N. Y. (appropriated)	50,000.00	50,000.00	50,000.00
For repairs to and improvement of plant at navy-yard, League Island, Pa. (appropriated)	30,000.00	30,000.00	50,000.00
For repairs to and improvement of plant at navy-yard, Norfolk, Va. (appropriated)	30,000.00	30,000.00	50,000.00
For repairs to and improvement of plant at navy-yard, Mare Island, Cal. (appropriated)	30,000.00	30,000.00	50,000.00
For repairs to and improvement of plant at navy-yard, Puget Sound, Washington (appropriated)	75,000.00	75,000.00	75,000.00
For construction plant at naval station, New Orleans, La. (appropriated)	25,000.00	25,000.00	15,000.00
B 1. *Special.—Construction and Repair of Vessels.*			
For 1 steel steam ammunition lighter, with all fittings complete, for use at naval station, Cavite, P. I.—requested by the Bureau of Ordnance (submitted)	30,000.00	30,000.00	
C. *Civil Establishment*			
At navy-yard, Portsmouth, N. H.:			
1 clerk to naval constructor (appropriated)	1,400.00		
2 writers, at $1,017.25 each (appropriated)	2,034.50		
At navy-yard, Boston, Mass.:			
1 clerk to naval constructor (appropriated)	1,400.00		
2 writers, at $1,017.25 each (appropriated)	2,034.50		
At navy-yard, New York, N. Y.:			
1 clerk to naval constructor (appropriated)	1,400.00		
3 writers, at $1,017.25 each (appropriated)	3,051.75		
At navy-yard, League Island, Pa.:			
1 clerk to naval constructor (appropriated)	1,400.00		
1 writer, at $1,017.25 (appropriated)	1,017.25		
At navy-yard, Washington, D. C.:			
1 clerk to naval constructor (appropriated)	1,400.00		
At navy-yard, Norfolk, Va.:			
1 clerk to naval constructor (appropriated)	1,400.00		
2 writers, at $1,017.25 each (appropriated)	2,034.50		
At naval station, Charleston, S. C.:*			
1 clerk to naval constructor (appropriated)	1,400.00		

*Now appropriated for at Port Royal, S. C.

Estimates of appropriations required for the fiscal year ending June 30, 1904, by the Bureau of Construction and Repair, Navy Department—Continued.

Detailed objects of expenditures and explanations.	Estimated amount required for each detailed object.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for current fiscal year ending June 30, 1903.
C. *Civil Establishment*—Continued.			
At navy-yard, Pensacola, Fla.:			
1 writer, at $1,017.25 (appropriated)	$1,017.25		
At navy-yard, Mare Island, Cal.:			
1 clerk to naval constructor (appropriated)	1,400.00		
2 writers, at $1,017.25 each (appropriated)	2,034.50		
At navy-yard, Puget Sound, Washington:			
1 clerk to naval constructor (appropriated)	1,400.00		
At naval station, New Orleans, La.:			
1 clerk to naval constructor (submitted)	1,200.00		
		$27,024.25	$25,824.25
			Amount appropriated, act of July 1, 1902.
D. *Increase of the Navy, Construction and Machinery.*			
On account of hulls and outfits of vessels and steam machinery of vessels heretofore authorized (See joint letter below.)	15,025,632.00	15,025,632.00	13,393,010.00
D. *Special.—Increase of the Navy, Training Vessels.*			
For 2 steel ships (1 of which shall be for use on the Pacific coast) to be used in training landsmen and apprentices, to be propelled by sail, each (submitted)	375,000.00	750,000.00	
For 1 wooden brig, to be used for training apprentices at stations, to be propelled by sail (submitted)	50,000.00	50,000.00	

WASHINGTON, D. C., *September 3, 1902.*

SIR: 1. We have the honor to submit herewith, in duplicate, joint estimates (inclosures 1 and 2) of the amounts required by the bureaus of Construction and Repair and Steam Engineering, under appropriation "Increase of the Navy, Construction and Machinery," for work on new vessels authorized by Congress to June 30, 1904, as per statements in detail herewith (inclosures 3 and 4), viz:

Sheet D.

Under Bureau of Construction and Repair:		
For fiscal year 1902–3	$15,528,647	
For fiscal year 1903–4	14,263,010	
		$29,791,657
Under Bureau of Steam Engineering:		
For fiscal year 1902–3	8,987,159	
For fiscal year 1903–4	8,540,388	
		17,527,547
Aggregate		47,319,204
Balance in Treasury available for above July 1, 1902 (less the sum of $260,000 for one gunboat to take the place of the *Michigan* on the Great Lakes, authorized by act approved May 4, 1898, said vessel to be built as soon as permitted under treaty)		32,293,572
Appropriation required for fiscal year 1903–4		15,025,632

2. This amount, $15,025,632, is the estimated amount required to be appropriated for work on new vessels authorized by Congress for "Increase of the Navy, Construction and Machinery," for the fiscal year ending June 30, 1904.

Very respectfully,

F. T. BOWLES,
Chief Constructor, U. S. Navy, Chief of Bureau.
GEO. W. MELVILLE,
Engineer in Chief, U. S. Navy, Chief of Bureau.

The SECRETARY OF THE NAVY.

VESSELS UNDER CONSTRUCTION.

Progress upon new vessels under construction during the past year has not been satisfactory. All the larger vessels have been delayed by nondelivery of structural steel, the vessels building at the Union Iron Works, San Francisco, by a strike beginning May, 1901, and ending in March, 1902, and the battle ship *Nebraska* by a strike which has as yet prevented any actual progress upon the structure of the hull.

The delay in the delivery of armor for the battle ships *Maine*, *Missouri*, and *Ohio*, and the monitors *Arkansas*, *Florida*, *Nevada*, and *Wyoming*, has retarded the completion of these vessels concurrently with other causes.

The inability of shipbuilders to obtain a sufficient force of skilled workers has been in many cases an important factor in the slow progress of the vessels.

The extensive delays previously existing on the torpedo boats and destroyers authorized under the act of May 4, 1898, are being terminated by the satisfactory delivery of these boats under the modified conditions approved by the Department and specially reported upon jointly by this Bureau and the Bureau of Steam Engineering.

The submarine boats building have not yet been offered for trial by the contractors, though with the exception of those building at the Union Iron Works, which were delayed by the strike, they have been reported practically completed for several months.

Owing to the delays which occurred on the part of the contractors in beginning the construction of the battle ships of the *Virginia* class, the armored cruisers of the *Pennsylvania* class, and the protected cruisers of the *St. Louis* class, an opportunity was afforded to the Bureau to make a careful revision of the general plans of these vessels, which has resulted in a considerable improvement in their military value and in their habitability.

For the *Virginia* class, the plans of the turrets were developed in more detail than is usual at this stage. The superposed turrets have a continuous inclined front, considerably reduced port opening, and by the removal of the turning motors from the rotating structure to the protective deck within the barbette, improvements in interior arrangements have been made, securing less liability to accident. Automatic shutters are fitted over the ammunition hoist apertures separating the turret from the barbette.

An entire rearrangement has been made of the stowage of ammunition and a scheme carefully prepared for the supply of ammunition to all parts of the battery without interference of one kind with another. This arrangement has been prepared in connection with an arrangement of armored splinter bulkheads for isolation of the guns of the 6-inch battery, and nickel steel protection on the sides of the vessel for the 3-inch guns on the main deck.

The arrangement of the chart house and bridges has been altered to conform to the most recent satisfactory practice, and stations for conning the vessel, both in cruising and in battle, have been provided well above the top of the superposed turret.

The other changes relating to the general efficiency of the vessel include hawse pipes for stockless anchors; windlass to accommodate four instead of two chain cables; the arrangement of quarters by loca-

tion, as far as practicable, of the mess rooms and staterooms outside the armored citadel, thereby providing improved light and ventilation for these quarters; the removal of the water-closets and lavatory arrangements for all officers to the gun deck, securing thereby better ventilation and avoiding the use of pump closets; the rearrangement of the sick bay, providing a contagious ward and operating room; a rearrangement of the fire room access and uptake hatches, providing for the escape of hot air and the better ventilation of the fire rooms; the replacing of the hanging coal bunkers by an isolated air space below the protective deck, connected with the ventilation system to reduce the temperature in the living spaces on the berth deck, and a more convenient arrangement of the galleys, bakery, and laundry.

Particular attention has been given to an efficient scheme for coaling. Large hatches have been provided for lowering coal in bags to the gun deck, without breaking bulk or hoist, thus dispensing with coal scuttles and portable coal chutes and incidentally providing better light and ventilation for spaces within the armored inclosure.

The changes made on the *Pennsylvania* and *St. Louis* classes are of the same general character.

The tabular statement below shows the degree of completion on July 1, 1902, of all vessels under contract, and also the probable delay in completion in excess of contract time:

Name.	By whom building.	Estimate of superintending constructor.		Contract time.	Expiration of contract time.	Months behind contract on July 1, 1902.
		Degree of completion July 1, 1902.	Probable date of completion.			
BATTLE SHIPS.		*Per ct.*		*Months.*		
Maine	Wm. Cramp & Sons	91	Nov. 15, 1902	32	June 1, 1901	17.5
Missouri	Newport News Shipbuilding Co.	66	May 18, 1903	32	Aug. 30, 1901	20.6
Ohio	Union Iron Works	60	Nov. 5, 1903	32	June 5, 1901	29
Virginia	Newport News Shipbuilding Co.	3	Mar. 24, 1905	36	Feb. 15, 1904	13.3
Nebraska	Moran Bros. Co	6	Feb. 1, 1905	36	Mar. 7, 1904	10.8
Georgia	Bath Iron Works	11	Mar. 5, 1905	36	Feb. 18, 1904	12.5
New Jersey	Fore River Ship and Engine Co.	10	Dec. 15, 1904	36	Feb. 15, 1904	10
Rhode Island	do	10	do	36	do	10
ARMORED CRUISERS.						
Pennsylvania	Wm. Cramp & Sons	27	June 10, 1904	36	Jan. 10, 1904	5
West Virginia	Newport News Shipbuilding Co.	25	Aug. 5, 1904	36	Jan. 24, 1904	6.4
California	Union Iron Works	6	Jan. 10, 1905	36	Jan. 10, 1904	12
Colorado	Wm. Cramp & Sons	30	May 25, 1904	36	do	4.5
Maryland	Newport News Shipbuilding Co.	23	Sept. 8, 1904	36	Jan. 24, 1904	7.5
South Dakota	Union Iron Works	5	Feb. 10, 1905	36	Jan. 10, 1904	13
PROTECTED CRUISERS.						
Denver	Neafie & Levy Shipbuilding Co.	82	Jan. 1, 1903	30	June 14, 1902	6.5
Des Moines	Fore River Ship and Engine Co.	72	Feb. 2, 1903	30	do	7.8
Chattanooga	Lewis Nixon	60	Apr. 14, 1903	30	do	10
Galveston	Wm. R. Trigg Co	61	May 29, 1903	30	do	11.5
Tacoma	Union Iron Works	50	Dec. 14, 1903	30	do	18
Cleveland	Bath Iron Works	83	Dec. 2, 1903	30	do	5.6
St. Louis	Neafie & Levy Shipbuilding Co.	3	Mar. 26, 1905	36	Mar. 11, 1904	12.5
Milwaukee	Union Iron Works	2	Mar. 17, 1905	36	Apr. 17, 1904	11
Charleston	Newport News Shipbuilding Co.	9	Jan. 18, 1905	36	Mar. 30, 1901	9.6

Name.	By whom building.	Estimate of superintending constructor.		Contract time.	Expiration of contract time.	Months behind contract on July 1, 1902.
		Degree of completion July 1, 1902.	Probable date of completion.			
MONITORS.						
		Per ct.		*Months.*		
Arkansas	Newport News Shipbuilding Co.	97	July 29, 1902	29	Mar. 11, 1901	16.6
Nevada	Bath Iron Works	93	Sept. 3, 1902	29	Mar. 19, 1901	17.3
Florida	Lewis Nixon	93	Oct. 11, 1902	29	Mar. 11, 1901	19
Wyoming	Union Iron Works	89	Oct. 5, 1902	29	Mar. 5, 1901	19
TORPEDO-BOAT DESTROYERS.						
Bainbridge	Neafie & Levy Shipbuilding Co.	99	July 10, 1902	18	Apr. 1, 1900	27.3
Barry	do	99	July 16, 1902	18	do	27.5
Chauncey	do	99	do	18	do	27.5
Dale	Wm. R. Trigg Co.	99	July 7, 1902	18	May 16, 1900	a 25.7
Hopkins	Harlan & Hollingsworth Co.	94	July 19, 1902	18	Apr. 19, 1900	27
Hull	do	93	do	18	do	27
Lawrence	Fore River Ship and Engine Co.	99	Sept. 3, 1902	16	Apr. 3, 1900	29
Macdonough	do	98	do	17	May 3, 1900	28
Paul Jones	Union Iron Works	95	July 20, 1902	18	Apr. 5, 1902	b 27.5
Stewart	Gas Engine and Power Co., etc.	72	Oct. 13, 1902	17	Feb. 28, 1900	31.5
Truxtun	Maryland Steel Co	98	Aug. 13, 1902	18	Apr. 4, 1900	c 28.3
Whipple	do	96	July 19, 1902	18	do	27.5
Worden	do	93	Aug. 19, 1902	18	do	28.5
TORPEDO BOATS.						
Stringham	Harlan & Hollingsworth Co.	98	July 8, 1902	18	Jan. 29, 1899	41.3
Goldsborough	Wolff & Zwicker	95	Sept. 1, 1902	18	Jan. 30, 1899	43
Blakely	Geo. Lawley & Son	98	June 27, 1902	12	Sept. 27, 1899	33
De Long	do	99	do	12	do	d 33
Nicholson	Lewis Nixon	98	Aug. 10, 1902	12	Sept. 26, 1899	34.5
O'Brien	do	98	July 26, 1902	12	do	34
Tingey	Columbian Iron	74	Oct. 1, 1902	12	Oct. 1, 1899	36
SUBMARINE TORPEDO BOATS.						
Plunger	Lewis Nixon	93	Sept. 12, 1902	11	Oct. 19, 1901	10.8
Adder	do	99	July —, 1902	8	Apr. 25, 1901	14.5
Grampus	Union Iron Works	82	July 25, 1901	8	do	15
Moccasin	Lewis Nixon	99	July 10, 1902	9	May 25, 1901	13.5
Pike	Union Iron Works	74	Aug. 25, 1902	9	do	15
Porpoise	Lewis Nixon	97	July 10, 1902	10	June 25, 1901	12.5
Shark	do	96	do	11	July 25, 1901	11.5

a Preliminarily accepted July 17, 1902.
b Preliminarily accepted July 19, 1902.
c Preliminarily accepted Aug. 16, 1902.
d Preliminarily accepted Aug. 11, 1902.

The reports of the superintending naval constructors at the works of the various ship contractors are appended to this report, showing in detail the condition of each vessel under construction on July 1, 1902.

ADDITIONS TO THE NAVY.

There is given below a tabulated statement of data relative to trials and acceptance of vessels since the last annual report:

Name of vessel.	Type.	Date of trial.	Speed required by contract.	Speed obtained on trial.	Date of preliminary acceptance.	Date of final acceptance.	By whom built.
		1901.	*Knots.*	*Knots.*	1901.	1902.	
Illinois	Battle ship	June 12	16	17.449	Sept. 16	June 5	Newport News Co.
Decatur	Torpedo boat destroyer.	Dec. 12	28	28.10	1902. Apr. 1		Wm. R. Trigg Co.
		1902.					
Perry	do	Apr. 30	a28	a28.32	M y 31		Union Iron Works.
Preble	do	May 27	a28	a28.03	June 21		Do.
		1901.			1901.		
Biddle	Torpedo boat	July 2	28	28.57	Aug. 5	Jan. 23	Bath Iron Works.
					1902.		
Thornton	do	Dec. 18	26	24.9	Apr. 1		Wm. R. Trigg Co.
Wilkes	do	June 5	a25	a25.99	June 27		Gas Engine and Power Co.

a Standardized trial under modified contract.

Vessels dropped from the Navy.

Name.	Type.	Status.	Disposition.	Appraised value.
Catskill	Single turret monitor.	Regular Navy	Stricken from Navy Register Oct. 21, 1901; sold Jan. 8, 1902.	$6,160
Manhattan	do	do	Stricken from Navy Register Dec. 14, 1901; sold Mar. 24, 1902.	8,376
Vermont	Wooden sailing vessel.	do	Stricken from Navy Register Dec. 19, 1901; sold Apr. 17, 1902.	18,000
Mahopac	Single turret monitor.	do	Stricken from Navy Register Jan. 14, 1902; sold Mar. 25, 1902.	8,516

NEW VESSELS AUTHORIZED.

Congress, in an act approved July 1, 1902, authorized the construction of two first-class battle ships of not more than 16,000 tons displacement, two first-class armored cruisers of not more than 14,500 tons displacement, and two gunboats of about 1,000 tons displacement. Under the provisions of the act approved March 3, 1901, which required the Secretary of the Navy to submit to Congress in December of that year the descriptions of the battle ships and armored cruisers recommended for construction, the plans for battle ships Nos. 18 and 19, the *Connecticut* and *Louisiana*, were adopted and approved by the Secretary of the Navy under date of July 22, 1902. Advertisements for bids for the construction of the *Louisiana* were published on August 1, 1902, upon which bids will be opened on October 1, 1902. The plans and specifications for the 14,500 ton armored cruisers Nos. 10 and 11, *Tennessee* and *Washington*, are practically completed and will be ready for advertisement at an early date, and also the plans for the 1,000 ton gunboats Nos. 17 and 18, the *Dubuque* and *Paducah*. Tug boats Nos. 8 and 9, also authorized in the act of July 1, 1902, under the appropriation for this Bureau, have been ordered built at the navy-yards, Boston, Mass., and Mare Island, Cal., respectively. The

total appropriation of $70,000, for each tug has been allotted, $28,500 to Steam Engineering and $41,500 to this Bureau.

BATTLE SHIPS 18 AND 19—CONNECTICUT AND LOUISIANA.

The following description of the designs of the *Connecticut* and *Louisiana*, the largest and most powerful battle ships yet laid down for the Navy, is taken from the official circular published for the information of bidders:

General dimensions and features of the vessel are as follows:

Length of load water line	feet	450
Breadth, extreme, at load water line	do	76½
Displacement on trial, not more than	tons	16,000
Mean draft to bottom of keel at trial displacement	feet	24½
Gross draft, full load, about	do	26¾
Total coal bunker capacity, about	tons	2,200
Coal carried on trial	do	900
Feed water carried on trial	do	66
Trial speed at sea for four hours	knots	18

The hull is to be of steel throughout, and will be fitted with docking and bilge keels.

Armament.—Main battery: Four 12-inch breech-loading rifles; eight 8-inch breech-loading rifles; twelve 7-inch breech-loading rifles.

Secondary battery: Twenty 3-inch, 14-pounder, rapid-fire guns; twelve 3-pounder semi-automatic guns; six 1-pounder automatic guns; two 1 pounder semi-automatic guns; two 3-inch field pieces; two machine guns, caliber .30; six automatic guns, caliber .30.

The battery will be mounted as follows:

The 12-inch guns in pairs in two electrically controlled, balanced, elliptical turrets on the center line, one forward and one aft, each with an arc of fire of about 270 degrees.

The 8-inch guns in pairs in four electrically controlled, balanced, elliptical turrets, two on each beam, at each end of the superstructure.

The 7-inch guns in broadside on pedestal mounts on the gun deck behind 7-inch armor, each gun being isolated by splinter bulkheads of nickel steel of from 1½ to 2 inches thick; forward and after guns arranged to fire right ahead and right astern, respectively; other 7-inch guns to have the usual broadside train.

The guns of the secondary battery in commanding positions, having a large arc of unobstructed fire, and protected wherever practicable.

All the 7-inch guns are so arranged that their muzzles train inside the line of the side armor, thus leaving a clear and unobstructed side when it is desired to go alongside a pier or vessel.

Arrangements will be made whereby the 3-inch guns on the main deck can be quickly and conveniently dismounted, housed, and secured.

Armor and similar protection.—The hull is protected at the water line by a complete belt of armor 9 feet 3 inches wide, having a maximum thickness of 11 inches for about 200 feet amidships. Forward and aft of this the maximum thickness is 9 inches within the limits of magazines, from which points the thickness is gradually decreased to 4 inches at the stem and stern.

The lower casemate armor extends to the limits of the magazine spaces and reaches from the top of the water-line belt to the lower edge of the 7-inch gun ports on the main deck, and is 6 inches in thickness, the athwartship bulkheads at the ends of this casemate also being 6 inches thick.

The casemate armor around the 7-inch guns on the gun deck is 7 inches thick, and the splinter bulkheads are from 1½ to 2 inches thick. The protection of 3-inch guns is nickel steel 2 inches thick.

The upper casemate athwartship armor extending from the shell plating to the 12-inch barbettes is to be 7 inches thick throughout.

The 12-inch barbettes extend from the protective deck to about 4 feet above the main deck, and consist of 10 inches of armor in front and 7½ inches in the rear above the gun deck. Between the gun deck and protective deck there will be a uniform thickness of 6 inches. The barbettes will not have any special framing, the connection of the armor to the decks being sufficient.

The 12-inch turrets will have a front plate 12 inches thick, rear plates 8 inches thick, and top plates 2½ inches thick.

The 8-inch barbettes will be 6 inches thick in front and 4 inches thick in rear, with the upper tube 3¾ inches thick and the lower tube 3 inches thick.

The 8-inch turret front plate will be 6½ inches thick, the rear plate 6 inches, and the top plates 2 inches thick.

The conning tower and shield will each be 9 inches thick, and the signal tower 6 inches thick. An armor tube 36 inches in diameter will extend from the base of the conning tower to the protective deck, and will be 6 inches thick throughout.

Teak backing of a minimum thickness of 3 inches will be fitted behind all side, athwartship, and 12-inch turret armor; 2 inches of backing to be fitted behind the 8-inch turret armor; other armor will be fitted without backing.

Protective deck.—There is a complete protective deck extending from stem to stern, the deck being flat amidships, but sloped at the sides throughout, and sloped at each end. It will be built up of 20-pound plating throughout, with nickel steel of 40 pounds on the flat and of 100 pounds on the slopes.

The following nickel steel protection is also to be fitted:

Hatch covers and gratings in the protective deck; splinter bulkheads on gun deck; sponsons and wing plates for two forward 3-inch guns and for four after 3-inch guns on gun deck; bullet shields between wing plates for 7-inch guns; side protection and wing plates for 3-inch guns on main deck; turret shelf plates; conning tower base plates; 7-inch gun port sill plates; 80-pound protection on ammunition hoist trunks not otherwise protected by armor, and 80-pound protection on coaling trunks on slope of protective deck to the height of berth deck amidships.

Cofferdams about 30 inches thick and extending from protective to berth deck level will be worked from end to end of the vessel, these cofferdams being extended above the berth deck, forward and abaft the transverse armor, to a height of about 36 inches.

The cofferdams will be packed with cellulose or other approved water-excluding material.

Ammunition.—The magazines and shell rooms are so arranged that about one-half the total supply of ammunition will be carried at each end of the ship.

Magazine bulkheads adjacent to heated compartments, such as fire rooms, engine rooms, and dynamo rooms, are arranged with air spaces.

The ammunition for 7-inch and smaller guns will be conveyed by hoists directly from the ammunition rooms or ammunition passages to the deck on which it is required, or as near that as possible. These hoists will be driven at constant speed by an electric motor and will be arranged to deliver seven pieces per hoist per minute.

The number of hoists will be as follows: Twelve for 7-inch, fourteen for 3-inch, 3-pounder and 1-pounder combined, and sufficent whip hoists to the tops. To supply the 7-inch hoists, four horizontal ammunition conveyers, operated by electric motors, will be fitted in ammunition passages for the transfer of ammunition from the handling rooms to the base of the hoists.

The turret guns have regular turret ammunition hoists, operated by electric power, these hoists leading directly from the handling rooms or the ammunition passages to the turrets.

For transporting 12-inch, 8-inch, and 7-inch ammunition, trolleys and tracks will be fitted in handling rooms, passages, and shell rooms.

Propelling machinery.—The engines will be of the vertical, twin screw, four-cylinder, triple-expansion type, of a combined I. H. P. of 16,500. The steam pressure will be 250 pounds. The stroke will be 4 feet. The ratio of high-pressure to low-pressure cylinder will be at least 1 to 7, and the diameters will be sufficient for the required I. H. P. at about 120 revolutions per minute. Each engine will be located in a separate water-tight compartment.

There will be twelve boilers of the Babcock & Wilcox type, placed in six water-tight compartments. They will have at least 1,100 square feet of grate and 46,750 square feet of heating surface, and must be able to furnish steam for the main engines and all the necessary auxiliary machinery and other steam machinery throughout the ship with an average air pressure in the ash pits of not more than one inch of water.

There will be three funnels, each 100 feet high above the base line.

The following auxiliary steam machinery of approved make and design, in addition to that pertaining to the main engines and dependencies, is to be supplied: Steering engine; windlass engine; ash hoist engine for each fire room; forced draft blowers; ice plant with a cooling effect of 3 tons of ice per twenty-four hours; evaporating plant, to consist of not less than four units, having a total capacity of 16,500 gallons of fresh water per day; a distilling apparatus capable of condensing at least 10,000 gallons of water per day.

The vessel to be heated by steam throughout.

The weight of all machinery and tools, stores, and spare parts will be about 1,500 tons.

The vessel will be lighted throughout by electricity. The electric plant will consist of eight 100-kilowatt steam driven generating sets, all to be of 125 volts pressure at the terminals, disposed in two separate and independent dynamo rooms.

There will be fitted all the usual means of interior communication, such as telephones, voice pipes, call bells, buzzers, gongs, and annunciators, engine and steering telegraphs, revolution and rudder indicators, heeling indicators, automatic fire alarm, warning signals, alarm signals, etc.

The total weight of equipment outfit, complete, will not exceed 355.28 tons.

With the exception of the auxiliaries above mentioned to be operated by steam, all power on board of the vessel will be electric, as, for instance, boat cranes, deck winches, turret turning motors, ventilation blower motors, etc.

All main compartments of the ship below the gun deck, except the coal bunkers, are to be provided with forced ventilation, there being no less than thirty-three blowers, with a combined capacity of not less than 104,000 cubic feet per minute. Special attention has been given to spaces subject to habitually high temperatures, such as engine rooms, fire rooms, and dynamo rooms. The ventilation system will be designed to cut the minimum number of water-tight bulkheads. All blowers, except forced draft blowers, are to be electrically operated.

The coal bunkers are to be arranged with satisfactory reference to the rapid and efficient supply of coal to the fire rooms and have a maximum capacity of about 2,200 tons. There are to be provided for coaling not less than six winches, twelve booms, and all necessary fixed chutes, scuttles, hatches, and other openings.

There will be two bill boards and four hawse pipes; each hawse pipe to be so designed that stockless anchors may be stowed in them. There will be four heavy anchors, two of the navy type and two of the stockless type.

The following boats will be carried, adequate provision being made for their convenient stowage and handling, two electrically operated boat cranes, eight pairs of boat davits, adjustable boat chocks, and all necessary fittings being provided for this purpose: One 50-foot steam cutter, two 36-foot steam cutters, one 36-foot steam launch, three 33-foot launches, five 30-foot cutters, two 30-foot whaleboats, one 30-foot gig whaleboat, one 30-foot barge, two 20-foot dingeys, one 16-foot dingey, one 14-foot dingey, and two life rafts.

The vessel is designed as a flagship, and the arrangement of quarters provides ample accommodations for the following complement: A flag officer, a commanding officer, a chief of staff, nineteen wardroom officers, ten junior officers, ten warrant officers, and not less than 761 men, including 60 marines.

There is a lower bridge both forward and aft, and a flying bridge forward, according to the latest practice. On the flying bridge is fitted a screen of bronze for the protection of the men at the wheel, and there is also a bronze chart house forward.

There are steel masts forward and aft, the foremast having an upper and lower top, the mainmast a lower top only. Masts are arranged for wireless telegraphy. There is one signal yard on each mast, also a searchlight platform forward and aft, with a crow's nest on the foremast.

A summary of the weights to be carried on trial is as follows:

	Tons.
Guns, mounts, magazine equipments, etc	944.94
Ammunition, two-thirds full supply	393.97
Steam engineering complete, with water in boilers, condensers, piping, etc., and stores, etc., not to exceed	1,500
Reserve fresh water for steaming purposes	66
Coal, normal supply	900
Boats and outfits	51.27
Masts and spars	30.98
Equipment, complete, including anchors, chains, electric plant, etc., and two-thirds equipment stores	355.28
Miscellaneous stores and water, two-thirds full supply	81.32
Provisions, clothing, and small stores, two-thirds full supply	146.84
Officers, crew, and effects	103.32
Total protection, including armor, armor backing, armor bolts, cellulose, and splinter bulkheads	3,992

BUILDING THE CONNECTICUT AT THE NAVY-YARD, NEW YORK, N. Y.

Congress in the appropriation act approved July 1, 1902, provided that one of the battle ships authorized by the act should be built in a navy-yard to be designated by the Secretary of the Navy. The navy-yard, New York, N. Y., having been designated by the Department,

and $175,000 having been appropriated for the purpose of preparing and equipping such yard for the construction of the vessel, this Bureau took immediate action upon the necessary preparations, which involved the construction of a new building slip, the purchase and erection of an electric traveling cantilever crane for handling material on the building slip, the alteration and extension of two shops (one of which was already contemplated and provided for by special appropriation), the extension of the railroad track, and the vacating of a temporary storehouse by the Bureau of Supplies and Accounts which had been located at the head of the building slip in a position required for construction work. This Bureau approved the plans of the new building slip on July 12, 1902, and forwarded them to the Bureau of Yards and Docks for execution. The requisition for the electric crane was approved on July 23, 1902, and even though from the same pattern as those previously supplied by the manufacturers, the earliest possible delivery which could be secured was nine months from the date of the contract. The alterations in buildings have been approved and begun by the Bureau of Yards and Docks.

Plans and specifications for the *Connecticut* were forwarded to the navy-yard, New York, N. Y., with authority to begin the construction of the vessel, on August 11, 1902. Advertisements for the steel material to be used in the construction of the hull were issued by the Department, on this Bureau's requisition, on August 1, 1902, and contracts awarded on the 12th instant for a total of 7,466 tons at a total cost of $462,691.87. The provisions of specifications and the terms of the contract for this material have been made in such a manner as to absolutely insure the obtaining of this material at as low a price as that at which it will be supplied to private shipbuilders for the same class of vessels. The following is a synopsis of the awards:

Class.	Number of tons.	Article.	Awarded to—	Per lb.	Total.
1	4,206	Ship plates	Carnegie Steel Co	$0.019	$179,007.36
2	987	Nickel steel plates	do	.0715	158,077.92
3	1,825	Miscellaneous ship shapes[a]	do	.019	78,489.60
4	188	Steel castings	United States Steel Co	.0695 .0648	27,763.39
5		Miscellaneous hull rivets	American Iron and Steel Manufacturing Co.	.031 .06	19,353.60

[a] One-fourth cent per pound allowed extra for cambered channels.

The authorized limit of cost of the *Connecticut*, exclusive of armor and armament, of $4,212,000, has been allotted among the Bureaus concerned as follows:

Construction and Repair	$2,852,000
Steam Engineering	1,100,000
Equipment	260,000

COST ACCOUNTS OF THE CONNECTICUT.

Congress, in the appropriation act approved July 1, 1902, made provisions in regard to keeping the cost accounts of vessels constructed in navy-yards and those built by contract, as authorized by the act.

By direction of the Department this Bureau prepared a scheme for keeping the accounts of the cost of the *Connecticut* in a manner that will at all stages of the work make it easily comparable with the cost

of the *Louisiana*, to be built by contract. The scheme is outlined in the following letter of the Bureau, which has been approved by the Department and issued for the guidance of all concerned:

DEPARTMENT OF THE NAVY,
BUREAU OF CONSTRUCTION AND REPAIR,
Washington, D. C., July 15, 1902.

SIR: 1. The act of Congress making appropriations for the naval service, approved July 1, 1902, provided that one of the battle ships authorized in the act should be built in a navy-yard, and further directed as follows:

"The Secretary of the Navy is hereby instructed to keep an accurate account of the cost of inspection and construction of vessels provided for in this act, whether built in Government yards or by contract, and report thereon to Congress, at each session, the progress of work and cost thereof, including the inspection of all material going into the construction of said vessels, and, upon the completion thereof, to report a full and detailed statement showing the relative cost of inspection and construction in Government yards and by contract."

2. The total cost of a contract-built ship includes:

First. The cost of the work and extras performed on the ship by the contractors, for which a contract price, plus the allowances made by the boards on changes for the extras, is paid.

Second. The costs of the parts furnished by the Government.

Third. The cost of the Government inspection of the contract work and materials.

3. The contract work consists of the building of the hull, the machinery, certain equipment work, such as electric plant, interior means of communication, etc., and the installation of the ordnance, together with furnishing and installing certain parts of the outfits (Equipage, Title B) under the Bureaus of Construction and Repair, Equipment, and Steam Engineering. Included in the cost of a contract-built ship, but furnished by the Government, are the armor and ordnance, all the ordnance outfits and parts of the outfits (Equipage, Title B), under the other bureaus. The inspection of the work by the Government includes the inspection by officers and civil employees at the works of the contractor and the inspection of materials subcontracted for at other works, more particularly steel structural materials, electric plant, etc.

4. In the third paragraph of its memorandum to the Department, No. 6406–A of the 10th instant, the Bureau outlined a method of making payments on the contract-built ships by establishing a system of grouped weights and prices which the Bureau has introduced upon vessels now under contract. The items which the Bureau would propose, going to make up the contract price of the vessel in accordance with the general outlined scheme above mentioned, are as follows:

GENERAL ITEMS OF CONTRACT PRICE.

(1) General superintendence, office expense, insurance, freight.
(2) Drafting work.
(3) Laying down in mold loft.
(4) Preparation of slip, cribbing, and scaffolding.
(5) Preparation of launching ways and launching ship.
(6) Trial trip expenses.

ITEMS OF SHIP PROPER IN CONTRACT PRICE.

(7) Ordinary steel in hull.
(8) Steel castings forming structural parts of hull, including stem, sternpost, struts, etc.
(9) Nickel steel protective deck armor, splinter bulkheads, armor gratings, and other light nickel steel protection furnished under the contract for the hull of the vessel, but excluding armor furnished by the Bureau of Ordnance.
(10) Deck pillars or stanchions.
(11) Deck planking and wood in docking and bilge keels.
(12) Linoleum, tiling, etc.
(13) Joiner work in living spaces.
(14) Wood ceiling and joiner work in magazines and storerooms.
(15) Wood ladders.
(16) Wood masts and spars.
(17) Metal ladders.
(18) Paint, cement, etc.
(19) Turret-turning machinery, roller tracks and rollers.

(20) Fixed ammunition hoist machinery and gear.
(21) Rudder and steering gear.
(22) Cranes, davits, and other gear for handling boats.
(23) Coaling gear.
(24) Pumping and drainage, and sea connections.
(25) Plumbing work, including fresh and salt water systems, water-closets, baths, etc.
(26) Ventilation.
(27) Anchor and cable gear.
(28) Warping and towing gear.
(29) Hand rails and awning stanchions, canopy frames and hatch cranes.
(30) Air ports, deck lights, and light boxes.
(31) Water-tight doors.
(32) Nonwater-tight doors.
(33) Manhole covers, scuttles, etc.
(34) Miscellaneous hull fittings.
(35) Armor backing.
(36) Cellulose and packing same.
(37) Fitting in place armor plates.
(38) Fitting in place armor bolts.
(39) Furniture and other construction outfits furnished by the contractors.
(40) Electric generating plant.
(41) Electric wiring throughout ship.
(42) Mechanical and electrical telegraphs, indicators, voice pipes, and other interior means of communication.
(43) Rigging and lines, canvas and bunting, and miscellaneous outfit under the Bureau of Equipment furnished by the contractors.
(44) Securing in place and installing ordnance and ordnance outfits furnished by the Government.
(45) Securing in place construction and repair outfits furnished by the Government.
(46) Securing in place equipment outfits furnished by the Government.
(47) Etc. Propelling machinery and steam engineering outfits; subdivided as determined upon by the Bureau of Steam Engineering.

5. It should be observed that the 46 items include all the contract work the payments for which are made by the Bureau of Construction and Repair, which has under its cognizance for payment purposes the contractor's part of the work done under equipment and ordnance. Item 47, etc., including the contract work under the Bureau of Steam Engineering, which have not been detailed above, will be subdivided in such manner as deemed suitable by the Bureau of Steam Engineering.

6. As stated in the Bureau's memorandum of July 10, above mentioned, the prices for all these items (for purpose of determining payments according to the weight of each item) would be arranged by the representatives of the bureaus in consultation with the contractor. The total of such items, including, of course, the general items Nos. 1 to 6, inclusive, would make up the contract price of the vessel.

7. It is evident that, under the proposed system of payments for contract work, the Department would have the total cost of the vessel divided into a number of items, whose value would be proportionate parts of the valuation of the vessel under the contract as shown by the contract price. It is desirable that a similar degree of subdivision should be carried out in keeping the accounts of the navy-yard-built vessel at the Department for the purpose of the comparison of the cost and the progress of the work directed by the act of Congress quoted.

8. The machinery for keeping cost accounts in the various departments under the bureaus at the navy-yard is adequate for this purpose, but special instructions need to be issued to carry out the intentions indicated above, so that detail comparison can be made between the cost of the contract-built ship and the navy-yard-built ship. In the navy-yard the work upon the ship will be executed under a large number of specific job orders, and considerable numbers of these job orders (in most cases) will be grouped together to form the "items" enumerated in paragraph 4. The labor accounts are kept by the clerks in each of the yard departments, and account of the materials under each job order is also made up by the clerks in the yard departments from the stub requisitions for materials returned with prices by the general storekeeper.

9. The general items (2), (3), (4), (5), and (6), enumerated in paragraph 4 above, will also be the summations of a series of job orders covering the work enumerated. The work corresponding to the first item enumerated—namely, "General superintendence, office expenses, insurance, and freight"—will be, in the case of the navy-yard, for general superintendence, the proportionate part of the salaries of the officers in each department engaged upon the work of constructing the vessel; for office expenses, the clerical force of each yard department, which will be occupied with work on the ship. There will be no insurance, but there will be charges for freight.

Such items have not heretofore, as a rule, been charged against the work of ships, but in the case of the construction of this ship at the navy-yard it seems proper that the yard officers should monthly certify to the paymaster of the yard the portion of their time that should be charged against the vessel under construction; and that in each yard department the officer in charge should make arrangements such that a proper part of his office expenses should be charged to the ship; and that the Bureau of Supplies and Accounts, which has charge of the transportation of articles, should make such arrangements as will insure the freight for materials employed in and about the work on the vessel being charged to the vessel's account.

10. Where the ship is built in the navy-yard, there will be no account for inspection corresponding to the inspection of the ship at the works of the contractor, but there will be accounts for inspection of materials contracted for by the Government, particularly structural material, electric plants, and similar items, as also probably such items as water tube boilers, pumps, etc., which, it is presumed, being special articles, will be purchased, as is now the common custom of the contractors for vessels. In the case of this Bureau's inspection of steel materials, the various inspectors of steel, etc., are carried upon the books at the navy-yard, League Island, Pa., and their time is now distributed and charged under "Increase of the Navy" to the different materials that they inspect, and it is presumed that no difficulty will arise in charging this inspection in a similar manner for a ship built at a navy-yard to that now employed for materials inspected for contract work.

11. The cost of the armor furnished by the Government, and its inspection, will be ascertained precisely as it is now ascertained for each vessel, the building of the vessel by the Government making no difference in this item of the total cost. Similarly the cost of the ordnance, which has always been furnished by the Government, will be ascertained in precisely the same manner as heretofore.

12. There is also a system of ascertaining in detail the cost of outfits under Equipage, Title B, for each bureau, through a "conversion account" of an elaborate character, which seems to require no change in order to ascertain the cost of such outfits.

13. With the exception of the general item (1), superintendence of officers, and freights, therefore, the mechanism already provided in the different departments of the yard under each bureau gives the necessary means of ascertaining the cost under each job order, and in each yard department grouping such costs of each job order under the different "items" enumerated in paragraph 4.

14. Each yard now makes out a monthly report of expenditures to the bureau of the Navy Department to which it belongs. It is suggested that a special report of expenditures be made by each yard department monthly to each bureau concerned, showing the cost of labor and of material separately for each of the items enumerated in paragraph 4. Such report of expenditures will necessarily, in its summation of labor, coincide with the summary of the pay roll for the yard department concerned furnished to the Bureau of Supplies and Accounts, and the summation of materials will agree with the invoices of expenditures under stub requisitions in the material accounts furnished the Bureau of Supplies and Accounts by the general storekeeper. The general storekeeper will furnish the Bureau of Supplies and Accounts with a monthly summary statement of materials on hand specially purchased for the vessel and not yet expended by stub requisitions.

15. It will therefore be seen that each bureau, when it receives the monthly report of expenditures specialized for this ship, will be able to check it up, and if found correct, forward it to the Bureau of Supplies and Accounts, which will then totalize and combine expenditures under all the bureaus in a complete statement, which will show all the expenditures made by the Government for the vessel built at the navy-yard, and will include the item of superintendence by officers and freights paid, which accounts do not come through the yard departments.

16. In the case of the contract-built ship the superintending constructor and engineer inspector will furnish to their respective bureaus monthly statements showing the amounts allowed the contractor under the system proposed under each of the items enumerated in paragraph 4. The bureaus will thus be in possession of the means of making a monthly comparison between the items of work included in the contract for the contract-built ship and for the navy-yard-built ship. The cost of items which are furnished by the Government in any case, whether a contract-built or a navy-yard-built ship, will be shown in the usual course as heretofore, but will also be shown in the monthly consolidated statement for each ship for purposes of comparison.

17. The Bureau recommends that the Department direct all bureaus to issue instructions for the preparation of monthly reports of expenditures in accordance with the above scheme, to be transmitted by them monthly to the Bureau of Supplies and Accounts, and that the Bureau of Supplies and Accounts be directed to

prepare and submit to the Department quarterly consolidated statements including all the reports of expenditures and the monthly reports received directly from general storekeepers and yard paymasters (for superintendence of officers, freights, and materials in stock for the ship), such consolidated statement to be forwarded to the Department via the bureaus, which will thus be able to note contents and make any comment upon the consolidated report which may seem desirable.

Very respectfully,

F. T. BOWLES,
Chief Constructor, U. S. Navy, Chief of Bureau.

The SECRETARY OF THE NAVY.

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SUMMARY OF VESSELS IN THE UNITED STATES NAVY.

VESSELS FIT FOR SERVICE, INCLUDING THOSE UNDER REPAIR.

FIRST-CLASS BATTLE SHIPS	9
SECOND-CLASS BATTLE SHIP	1
ARMORED CRUISERS	2
ARMORED RAM	1
DOUBLE-TURRET MONITORS	6
PROTECTED CRUISERS	14
UNPROTECTED CRUISERS	3
GUNBOATS	12
LIGHT-DRAFT GUNBOATS	3
COMPOSITE GUNBOATS	3
TRAINING SHIP (NAVAL ACADEMY), SHEATHED	1
SPECIAL CLASS (DOLPHIN-VESUVIUS)	2
GUNBOATS UNDER 500 TONS	21
TORPEDO-BOAT DESTROYERS	3
STEEL TORPEDO BOATS	28
SUBMARINE TORPEDO BOAT	1
WOODEN TORPEDO BOAT	1
IRON CRUISING VESSELS, STEAM	5
WOODEN CRUISING VESSELS, STEAM	6
WOODEN SAILING VESSELS	4
TUGS	39
AUXILIARY CRUISERS	5
CONVERTED YACHTS	23
COLLIERS	16
SUPPLY SHIPS AND HOSPITAL SHIP	11
TOTAL	223

VESSELS UNDER CONSTRUCTION OR AUTHORIZED.

FIRST-CLASS BATTLE SHIPS	10
ARMORED CRUISERS	8
STEEL SINGLE-TURRET MONITORS	4
PROTECTED CRUISERS	9
GUNBOAT FOR GREAT LAKES (NOT BEGUN)	1
COMPOSITE GUNBOATS	2
TORPEDO-BOAT DESTROYERS	13
STEEL TORPEDO BOATS	7
SUBMARINE TORPEDO BOATS	7
TUGS	2
TOTAL	63

VESSELS UNFIT FOR SEA SERVICE.

IRON SINGLE-TURRET MONITORS	5
IRON CRUISING VESSEL, STEAM	1
WOODEN CRUISING VESSELS, STEAM	10
WOODEN SAILING VESSELS	8
TOTAL	24
GRAND TOTAL	310

STANDARD BOATS IN THE UNITED STATES NAVY.

Type of boat.	Length, extreme.	Breadth, extreme.	Depth from top of gunwale to lower edge of rabbet.	Weight. Hull.	Weight. Total, including outfit.	Maximum number of men boat will carry.	Weight of provisions and water.	Corresponding freeboard.	Sail area.	Area of load water plane, service condition.
	Ft. In.	*Ft. In.*	*Ft. In.*	*Lbs.*	*Lbs.*		*Lbs.*	*Ft. In.*	*Sq. ft.*	*Sq. ft.*
Steam cutters	50 0	10 0	5 3	13,591	31,398	75	750	2 9⅜	307.00	312
	40 0	9 0	4 7⅛	8,064	18,720	60	600	1 9½	372.40	212.8
	36 0	8 9	4 6	7,037	16,001	53	530	1 8⅜	318.58	182.6
	33 0	8 7	4 5	5,510	13,476	48	480	1 8⅜	301.90	172.5
	30 0	8 0	4 1⅝	4,390	10,901	40	400	1 8¼	253.75	145
	28 0	7 8	4 0⅞	4,007	9,470	35	350	1 6¼	218.82	125
Launches	36 0	9 9⅛	3 9	4,550	7,073⅛	78	780	2 0⅞	559.87	220
	33 0	9 3½	3 8	3,591	5,910½	64	640	1 11⅛	507.00	168.5
	30 0	8 6	3 5	2,705	4,797⅛	50	500	1 9½	456.00	152.75
	28 0	7 5	2 8	2,150	3,800	40	400	1 1¼	290.00	143
Cutters	30 0	8 0	2 10	2,262	3,384⅛	45	450	1 4	322.00	126
	28 0	7 5	2 8	1,952	3,006½	40	400	1 2	290.00	114.75
	26 0	6 11	2 6	1,560	2,526½	30	300	1 0¼	240.00	94.5
	24 0	6 6	2 6	1,142	2,059½	28	280	1 0	207.00	91
	20 0	5 3	2 1	453	1,092¼	12	120	1 1⅛	142.80	66.5
Barge	30 0	6 11	2 8	1,712	2,960	37	370	1 0	293.00	117.5
Whaleboats	30 0	6 10	2 5	1,767	2,722½	28	280	1 1½	278.00	111.5
	29 0	6 8	2 5	1,499	2,441¾	25	250	1 1	260.00	104
	28 0	6 6	2 5	1,346	2,268½	23	230	1 1⅜	240.00	96
	24 0	5 11½	2 2½	1,050	1,888	15	150	1 0	173.65	77
	20 0	5 3	2 1	484	1,090¾	10	100	1 1⅛	137.00	58
Gig whaleboats	30 0	6 2	2 5	1,365	2,391¼	20	200	1 2⅜	236.00	94.75
	28 0	6 0	2 5	1,140	2,139½	16	160	1 3	211.00	85
Dingeys	20 0	5 6	2 2	710	1,279½	12	120	1 2	134.40	59.7
	18 0	5 4	2 1	612	1,150¼	10	100	1 0¼	126.32	56.14
Dingeys (special)	18 0	5 3¾	2 1	400	900½	10	100	1 1	126.32	.....
	16 0	4 6	1 10	324	684⅜	5	50	0 11⅝	88.40	39.25
	14 0	4 4	1 8	250	548¾	4	40	0 8⅝	71.00	34.5
Balsas	18 0	6 2	1 9⅜	700	981	12	120	.....	56.61	.....
	16 0	5 6¾	1 7⅞	575	840	9	90	.....	47.50	.....
Punts	12 0	4 2	1 8	405	433	.....	.....	.....	.....	.....
	10 0	3 7	1 5⅛	341	369	.....	.....	.....	.....	.....

Very respectfully,

F. T. BOWLES,
Chief Constructor, U. S. Navy,
Chief of Bureau.

The SECRETARY OF THE NAVY.

REPORT OF CHIEF OF BUREAU OF STEAM ENGINEERING.

DEPARTMENT OF THE NAVY,
BUREAU OF STEAM ENGINEERING,
Washington, D. C., October 1, 1902.

SIR: In obedience to your order of July 3, 1902, the following annual report of the operations of this Bureau during the fiscal year ending June 30, 1902, together with the estimates of the Bureau for the fiscal year ending June 30, 1904, is respectfully submitted:

Appropriations, steam machinery, 1901–2.

Amount appropriated for fiscal year ending June 30, 1902, act approved March 3, 1901		$3,245,000.00
Labor in navy-yards and stations in repair of steam machinery, boilers, etc., of naval vessels fitting for sea service, preservation and repair of tools, handling and preservation of materials, stores, etc	$1,569,365.81	
Purchase of materials, stores, machine tools, freight, and incidental expenses	959,819.70	
Payments for repairs, materials, freight, and incidental expenses for ships on foreign stations	181,516.88	
Total	2,710,702.39	
Less refunds by transfers in adjustment of appropriations	115,087.92	
Total expenditure		2,595,614.47
Balance in Treasury September 1, a portion being required to pay outstanding obligations		649,385.53

PORTSMOUTH, N. H., NAVY-YARD.

The Bureau regrets that it can not report that the construction of an entire new collection of buildings for its purposes has been commenced at this yard, for those now used by it are entirely unsuited for their purposes, having been built before most of the modern appliances for handling work, such as traveling cranes, were even thought of, besides being too small and improperly arranged and located. More than this: though part of the machine shop is now overloaded to an almost dangerous degree, additional tools are required, and floor space for them, to complete work already ordered within the specified time.

Appropriations have been made for the rebuilding of the machine shop, for an administration building, and for a power house and chimney. The further amounts necessary to erect foundry, boiler and copper shops, smithery and pattern shops, according to plans already submitted, should be at once made available.

Last year the Bureau submitted an estimate of $100,000 to purchase power tools for this yard and place the shops in condition to perform work expeditiously and economically, and this is renewed with the hope that it, and appropriations for new buildings, will be passed.

Four 20-inch I-beams, each with combined hoist and traveler, have been fitted in the lower machine shop over the heaviest tools and have proved of great value as a makeshift for a traveling crane, working as they do in connection with a railroad track, also installed during the last year in the same shop. To lead this track into the shop a large door was cut through the north end and the light and ventilation greatly improved thereby.

Very extensive repairs, amounting almost to rebuilding, have been made to the machinery of the *Raleigh* and *Detroit*, and both vessels are expected to be ready for the winter maneuvers. Water tube boilers were fitted in the former vessel.

Repairs, some quite extensive, have been made to the machinery of the following vessels, or stores and outfits prepared for them: *Bagley*, *Barney*, *Biddle*, *Eagle*, *Vixen*, *Marietta*, *Yankton*, *Nezinscot*, *Sioux*, and *Baltimore*.

The machinery has been removed from the *Reina Mercedes* with a view to making her a sailing ship.

Thirty engines and spare parts have been built for steam cutters; nine of those have been installed in the cutters. Forty-seven additional engines for cutters are in various stages of completion, and nine cutters are having machinery fitted.

The various steam generators have been examined and repaired as required.

Much work has been done for other yard departments, particularly in the foundry, for the bureaus of Yards and Docks, Construction and Repair, and Equipment.

The following additional tools have been obtained during the last year: One Becker Brainard vertical milling machine No. 6; one copper pipe bending machine from Norfork Navy-Yard; one Landis 10 by 30 inch grinding machine; four 10-ton Reading, multiple geared, combined hoists and travelers; one 2,000-pound steam hammer; one 3-inch bolt forging machine; one single surface planing machine; one improved jointing and facing machine; one No. 3 bipolar motor; six bench wood trimmers.

All of the foregoing are installed in place and in successful operation excepting the steam hammer and bolt-forging machine, which, on account of lack of space, are awaiting the vacating of the blacksmith's shop by the Department of Construction and Repair. It is hoped that these tools may soon be in position and in operation, as they are greatly needed.

The following extract from report of the head of department of Steam Engineering, and in which this Bureau heartily concurs, is respectfully submitted for the consideration of the Department:

> In handling and dealing generally with the many bulky heavy articles to be found in a navy-yard, it inevitably happens that the head of the department to which they appertain is finally called upon to decide in regard to their location and use. In regard to smaller ones of complicated forms questions are continually arising which can only be answered by an expert, and so they, too, fall into his custody as soon as any difficulties arise in regard to them. There are many objects, probably most of those handled in the Steam Engineering department, which, as a matter of fact, are in the actual custody of the head of the department, though nominally in that of the general storekeeper. The numerous papers called for by this state of affairs, together with the resulting complications, hinder work and are very trying. I am of the opinion that if the yard general storekeeper could be relieved of the actual custody of the stores and supplies, which as a rule he knows nothing about, neither is he supposed to know, by the heads of the various departments concerned, that much unnecessary trouble and difficulty would be removed and economy in expenditures would follow.
>
> This appears to be now done by the representatives of the bureaus of Ordnance and Medicine and Surgery. I see no reason why the same rule should not apply, for the same reasons as in these cases, to the representative of the Bureau of Steam Engineering.
>
> In connection with these suggestions, I beg leave to state to the Bureau that its action in allotting a regular monthly amount for the employment of labor has had a most happy effect in enabling the mechanics employed to enjoy some certainty in regard to the permanency of their positions. In consequence, very few discharges

have been made, and the results have been most encouraging and gratifying. I recommend the continuance of this practice.

The apprentices of this department during the past year have made a most gratifying exhibition of willingness to learn and of proficiency in their several trades. The subject of their education is well worthy of consideration by the Bureau.

The expenditures at this yard during the last year amounted to $317,339.73.

* * * * * * *

LIQUID FUEL FOR NAVAL PURPOSES.

The use of crude oil as a combustible for marine purposes has probably increased to a greater extent during the past two years than during the previous century. This has been due to several causes. The character of the oil lately discovered throughout the world is particularly applicable for use as a fuel. The oil fields are likewise near tide water, and therefore it is possible to construct pipe lines to the sea and deliver the product on board the tank steamers at comparatively slight cost. There is also good reason for believing that the wells are not likely to be soon exhausted and that an ample supply can be assured for an increased demand of the future.

It is evident that there is a very strong desire and purpose upon the part of many shipowners to substitute oil for coal. The thermal, mechanical, and commercial advantages that would result from a change are so well known that it is unnecessary to recount them. Nearly every reason that can be advanced for using oil as a fuel in the mercantile marine is also applicable to the Navy. In the case of warships, however, there are also military benefits to be secured that are as important as the commercial and mechanical advantages.

Any fuel installation which will obviate the smoke nuisance, reduce the complement in the fire room, extend the steaming radius of the war vessels, and permit maximum speed to be obtained at shorter notice, increases the efficiency and value of the fighting ship.

The numerous experiments that have been made by several naval powers during the past forty years in the attempt to use oil as a fuel show how important this question is regarded by military experts. It is now plain why success was not attained. There was too much effort exerted to burn oil in the same manner as coal. It is now realized that the oil should be atomized (it is impossible to completely gasify it) before ignition, and that the length of the furnace, the volume of the combustion chamber, and the calorimetric area are factors which must be considered. In fact, it is highly probable that it may be found advisable to design a special boiler for burning oil.

As more time, talent, and money are now being devoted to the solution of the problem, the hope of securing success has been greatly strengthened. Many unreliable statements have been published as to the success secured, but careful investigation shows that they were inspired by interested parties. It can be well understood that it is exceedingly difficult to secure reliable data at the present time. The several shipowners, manufacturers, and inventors are not inclined to tell of their disappointments, reverses, or failures. Those who have attained success as a result of experiment and experience do not feel called upon to give the world information that has been obtained at considerable cost and trouble.

Expert testimony is often of doubtful value. With regard to such testimony, a distinguished jurist once remarked that its character frequently depended upon who paid the retaining and professional fee.

In view, therefore, of the trifling amount of reliable data extant, the Bureau has projected an extended series of tests to determine the value of liquid fuel for naval purposes. These experiments commenced a few months ago. Taking into consideration the inevitable delay that must result from the installation of various burners, and recognizing the fact that competitors expect and should be permitted to make preliminary trials, it can be stated that the experiments have been conducted with considerable rapidity. It takes about one week to install a new burner, make preliminary tests, and conduct two official trials.

In some quarters there seems to be a prevailing idea that the Government has established an experimental plant where inventors can have the opportunity of developing and perfecting their appliances. The Bureau has no such purpose in conducting the tests, for it is expected that each competitor will carefully study the detailed drawings furnished him of the experimental plant, and therefore be prepared to fit his appliance and be ready for a preliminary trial in two days from the time the plant is placed at his disposal.

The problem of using liquid fuel for naval purposes is quite distinct from the problem of its use in the mercantile marine, although the conditions on passenger and freight ships approximate very closely in some respects to service requirements. For ships of war the problem can therefore be solved only by the Department making its own tests and experiments. The performances, however, of the merchant ships having oil-fuel installations have been carefully observed. Representatives of the Bureau have been officially directed to report and observe upon the efficiency and sufficiency of such installations. Some of the most successful marine installations on both the Atlantic and Pacific coasts have been examined. The owners of the steamers *J. M. Guffey*, *Paraguay*, *City of Everett*, and *Mariposa*, having permitted the Bureau to report upon the oil-fuel installations of those vessels, a careful and extended investigation as to the character of each of their plants has been made. The liquid-fuel board has also examined the method of refining oil, and the Department has communicated with scores of individuals and corporations who have demonstrated by actual experience that they possess an intricate knowledge of some phases of the question.

The more this question is investigated the more intricate seems the problem of successfully installing an oil-fuel appliance on board a battle ship. It ought to be successfully used on the torpedo boats, as well as upon auxiliary naval vessels that steam between regular ports. For the army transport service it might prove very desirable, since a supply of oil could be maintained at the several calling ports. In regard to the installation on the large powered battle ships and armored cruisers, there are three distinct features which must be considered, viz: The mechanical, commercial, and the structural. Regarded from two of these view points it seems as if it would be some time before "coaling ship" ceases to be an evolution upon the war vessel. While both the naval and mercantile vessels traverse the ocean, there is a wide difference in their construction as well as in the nature of the duty performed, and this must be taken into account in designing the motive plant.

In the investigation of the subject of using liquid fuel for naval purposes it will be necessary to give due weight to the various features that will influence, if not determine, the solution of the problem. The question, therefore, comprises the following divisions:

First. The engineering or mechanical feature.

This relates to the efficient and economical burning of oil, and to the possibilities of increasing the consumption at short notice, so that maximum power can be readily and easily obtained. From the time the mechanical experts realized that the efficient, economical, and rapid burning of liquid fuel was greatly dependent upon the success secured in atomizing the oil there was rapid development. It was only a few years ago when the oil was simply thrown into the furnace by means of an injector. When that method was used the evaporation was dependent to a great extent upon the amount of incandescent surface that could be secured to ignite the fuel. It has only been within the last three years that the exceeding importance of atomizing the oil has been recognized.

It may therefore be affirmed that the efficiency of the burner is simply proportionate to its power to atomize the oil and then to turn these minute particles of oil into a mixture of combustible gas and fine particles of carbon, so that complete combustion, as well as ability to force the consumption of the oil, can be secured. There are many burners which can atomize the oil quite satisfactorily, and, as constant and progressive improvement is being made in this direction, the engineering and mechanical problem is nearing solution. The heating of the oil, as well as the heating of the air required for combustion, must be provided for, and extended experiments should be made to determine the simplest and the cheapest methods of attaining these objects.

The necessity for heating the air requisite for combustion should be impressed upon all contemplating the use of liquid fuel as a combustible. It would be best to force the passage of this air over heated surfaces either by forced or induced draft, but as this might involve considerable expenditure for installation, it is possible that simpler means might be effectual. The Bureau hopes before these experiments are concluded to make a special series of tests showing the evaporative efficiency secured when admitting the air to the furnace at different degrees of temperature.

The mechanical method of introducing the oil was so inefficient in the past that even experts were not able to burn the amount of oil desired. It has always been possible to burn some oil and to secure nearly the full thermal efficiency of the combustible. The great difficulty in the past was due to the fact that no one seemed to know how to burn enough oil and yet have it under control. There is therefore no record that, previous to two years ago, any boiler ever evaporated the amount of water with oil as a combustible that was secured under forced-draft conditions with coal as a fuel. Stated in another way, the boiler could not be forced with oil to the same extent as with coal. The experiments conducted by the liquid-fuel board have shown that it is now possible to force the combustion of oil, and that the greatest evaporation per square foot of heating surface secured with coal can be greatly exceeded by an oil-fuel installation of modern design where provision has been made for atomizing the combustible and heating the air and oil. Continued experiments should therefore be conducted under Government supervision.

The liquid-fuel board has already secured valuable information upon most of these points. A great service will be rendered the engineering interests of the country if further experiments can be conducted under the auspices of disinterested officials of the Navy, who, by reason of their training and experience, should be particularly quali-

fied to carry on such tests. The engineering or mechanical features of the problem will undoubtedly be solved in a degree materially satisfactory to maritime and manufacturing interests, if not to naval experts, by further experimental work of the character that has been performed.

Second. The commercial feature.

This relates to the question of cost and supply. It may be regarded as a certainty that, except wherein unusual conditions prevail, the cost of oil for marine purposes will generally be greater than that of coal. The cost is even now less for vessels departing from the Gulf and California sea ports, but the rule will hold elsewhere. While the question of cost should be of secondary importance in military matters, it must be taken into consideration in industrial matters. It is the expense of transportation that now prevents the oil from being a cheap combustible for marine purposes, but this disadvantage ought to be soon removed. While it may be put on the tank steamer very cheaply at ports like Point Sabine, its commercial value will be determined by the cost of delivery at commercial and maritime centers. This feature of the problem is beyond the ability of the Navy to control, but it must be regarded as an important phase of the subject.

In considering the matter of cost the fact should be remembered however that but comparatively few tank steamers are carrying oil between Point Sabine and the North Atlantic seaports. The expense of fitting up these vessels has been very heavy, due to the fact that unexpected difficulties developed in the cost of making the installations. This has compelled the owners of the oil steamers to charge comparatively high prices for transportation of the fuel. It can certainly be expected that when a large fleet of vessels are used for carrying oil and when terminal storage facilities are provided that there will be a material decrease in the price of oil in the leading cities on the coast. This is a very important commercial phase of the question, and should be carefully considered in determining the probable relative value of the two combustibles in the early future.

It is undoubtedly a fact that the transportation charges per mile for oil at the present time are excessive compared with the freightage for coal, and this incongruity of expense account against oil can not continue much longer.

As regards the question of supply, it may be more expensive if not difficult to transport and to store oil than coal. The fumes of all petroleum compounds have great searching qualities, and therefore extreme precaution will have to be taken to guard the storage tanks. If it be true that for military purposes it is best in time of war to keep all reserve fuel afloat, then liquid fuel is at a disadvantage in this respect. The mining and railroad companies have invested so heavily in the coal industry, and the transportation facilities have been so perfected, that it is now possible to quickly deliver a cargo of coal at any point in the world. There has been, likewise, a development in the method of loading and unloading cargoes of coal. Since it will require progressive development to perfect the transportation and the storage of oil, and as the world's supply is still an unknown quantity, it will be some time before there may be a reserve supply of oil at the principal seaports.

It must also be remembered, when considering the problem of supply, that the naval vessel must be kept in readiness for orders to proceed at any time to any port within her steaming radius. The merchant vessel steams between regular seaports, where it would not be diffi-

cult to induce merchants to keep a supply of oil as soon as there is a regular and constant demand for it. The question of supply for battle ships and cruisers may therefore not only be a commercial affair, but prove to be a military problem, since the oil requirements of naval vessels for service conditions might only be met by the Government establishing oil-fuel stations. The military aspect of the question may prove to be a serious problem, since it not only necessitates heavy expenditures, but it may involve the greater question as to the wisdom of maintaining a complete chain of fuel stations between country and colony.

Third. While the engineer may be most interested in the mechanical features and the shipowners in the commercial aspect, the constructor will meet with difficulties in solving the structural problem relating to the installation of oil fuel on board ship.

The structural feature of the battle ship may prove a serious detriment to the installation of an oil-fuel appliance. The problem of storing oil on board war ships which possess protective decks is much more complex than the problem of its storage in vessels of the merchant marine. Everything on board the battle ship is subordinated to making the vessel a gun platform. There are many more compartments in the war vessel than in the merchant ship.

In all probability the great bulk of the oil in the war ship would have to be kept in the double bottoms. As the petroleum vapors are quite heavy, it may be a difficult matter to free these compartments of explosive gases, especially when the compartments are partly empty. By reason of the great number of electrical appliances in use on board the war ship, thousands of sparks are likely to be caused, any one of which might cause an explosion and set the oil fuel on fire. Our limited experience with submarine boats may give us an object lesson as to the liability of hydrocarbon gases to explode.

In the merchant service the oil is often stored in expansion tanks or trunks which rise to the height of the deck, and on some of the vessels there is a cofferdam around these tanks so that any leakage of oil can be quickly discovered. It is also a comparatively easy matter to free such tanks of any dangerous gases that may accumulate. Inspection of the tanks at all times can also be readily accomplished.

In view, therefore, of the more difficult conditions under which the oil will have to be carried in the naval service, the structural features are certain to have an important bearing upon the question as to whether or not an oil installation is possible in large ships of war.

The Bureau is not inclined to be pessimistic in regard to the successful solution of the problem. It believes that it is expedient to frankly state the difficulties that are likely to be encountered, so that every means can be considered for overcoming them.

The Bureau has no hesitation, however, in declaring that in view of the results already secured by the liquid-fuel board an installation should be effected without delay on at least a third of the torpedo boats and destroyers. The junior officers of the service are very much interested in the matter, and if several boats are equipped entirely with oil-fuel appliances, a spirited and keen but friendly rivalry will be created which will result in a material increase in the efficiency of the torpedo-boat flotilla. Such an installation would also permit a competition to be established between the boats using coal and those using oil, and this would be another incentive to cause systematic and careful study of the subject upon the part of all connected with the torpedo fleet.

The data which have been secured by the liquid-fuel board will be exceedingly appreciated in maritime and industrial circles. A careful analysis of these data will show how complete it is and how carefully it has been collected. Although the experiments have only been in progress for a short time, practically every engineering principle that enters into the oil-fuel question has been touched upon by the board. The tests that have been conducted have been of such a diversified nature, and so many deductions can be made, that other experimenters will now be enabled to ascertain in what direction research should be carried on to secure further definite information.

The completeness and character of the experimental plant has probably never been surpassed, and it is due to this fact that the data collected will command attention in the engineering world.

While the information secured may not hasten the introduction of oil as a fuel in armored cruisers and battle ships, it will materially increase oil-fuel installation in ships of the merchant marine and in shore establishments.

It is the engineering or mechanical feature which is of commanding importance in the industrial or mercantile marine world. The structural disadvantages which are so serious as regards naval development will only be encountered in a less degree in ships of the mercantile marine.

The structural disadvantages that may prove so serious in the Navy will not be encountered in the installation of liquid fuel appliances in shore establishments. The insuring of a reserve supply of the fuel ought also to be a less serious problem for industrial plants. It should therefore be understood that the naval problem is distinct unto itself, and that while the experiments so far conducted show that an installation on a battle ship is a serious question, the tests also prove that for manufacturing purposes crude petroleum is in many respects an incomparable fuel.

Probably not over a fraction of 1 per cent of the oil used as fuel would be consumed by the Navy; and therefore, while further investigation may be necessary to show the adaptability of oil for large war vessels, the tests already conducted will be of great value and afford considerable information to all present consumers of liquid fuel, as well as to those contemplating the installation of oil-fuel appliances.

The engineering information which is being obtained by the liquid-fuel board will secure increased efficiency of the motive power of the naval stations in the future and also conduce to the benefit of the torpedo-boat flotilla. It will also afford another illustration of the manner in which the industrial world has been aided by naval experimental research.

The data collected during the official oil tests should be compared with the results secured under the same boiler when coal was used. The evaporative efficiency, as well as the ability to force the boiler with two kinds of fuel, can thus be compared and the engineering advance that has been made of late can best be appreciated. It will be mainly by reason of the fact that this comparative data is obtainable that important conclusions can be drawn from the information already secured.

The Bureau submits a copy of the report of Lieut. Ward P. Winchell as to the performance of the steamer *Mariposa* when using oil exclusively under her boilers in making the round trip between San Francisco and Tahiti.

The Bureau also submits a copy of the preliminary report of the liquid-fuel board.

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PERSONNEL.

It is now five years since the substantial features of the naval personnel bill were agreed upon by representative officers of the naval service, and approved by the executive administrators of the Navy Department. Fortunately for the interests of the Navy, a period of fifteen months elapsed from the time the bill was introduced in the Congress until it became a law. During the intervening time the subject was studied by many thoughtful officers, as well as by the members of both Naval Committees. This reflection and investigation caused the merits and weaknesses of the measure to be pointed out and permitted the friends of the bill to arouse public sentiment in favor of the adoption of a proposition that had been carefully considered by officers of various grades and corps, and which was the practical outcome of twenty years' study of the subject.

Three and one-half years have elapsed since the bill was made a law. After an experience of that length of time, it would seem as if a decision should have been reached as to the ultimate success of the project. It is simply stating a fact when it is asserted that one-half of the line officers on the active list of the Navy have yet to be convinced of the utility of amalgamating the duties of the deck and engineer officers. As for the retired officers, it is the exception to find those who have any sympathy with the scheme, or who do not predict an inefficient naval service as a result of the experiment.

A careful perusal of the naval periodicals of America and Europe, as well as extended correspondence and personal interviews with hundreds of persons interested in the question, convinces me that the best friends of the Navy without the service, as well as the Admiralty officials abroad, are still amazed at the experiment that we have undertaken. In fact, they are more doubtful than they ever were before of the ultimate success of the scheme. There is an old adage which states that the looker on sometimes sees more of the game than the players. This truth should be kept in mind in giving weight to the opinion of retired naval officers of our own service, of friends without the organization, and of thoughtful foreign experts as to the beneficial operation of the law.

It is but fair to state, however, that many officers in our own service, who should have the best means of observing the result of the experiment, are convinced that the passage of the law was in the line of naval development and advancement. But even some of these officers have admitted that more substantial results ought to be apparent by reason of the favorable conditions under which the law went into effect and in view of the period of time that the experiment has been in operation.

While the amalgamation of the duties of the line and engineer corps was undoubtedly the essential feature of the personnel law, there were thoughtful officers who were more interested in the passage of the bill by reason of the fact that the measure contained provisions whereby voluntary and compulsory retirement was secured, thus insuring a healthy flow of promotion from the various grades. For over fifty years naval experts had been urging the enactment of legislation which

would make it possible for officers to secure command and flag rank at a period of life when they were best able to take up exacting and important duties. Where seniority promotion alone prevailed, the mental and physical vigor of some officers had often become impaired by the time they reached flag and even command rank, and it was to remedy this weakness that it was deemed expedient to follow the experience of foreign powers by using radical measures to insure a regular flow of promotion.

It should also be kept in mind that nearly every officer in the naval service either secured promotion or received increased pay as a result of the personnel law. The officers of the Navy had been underpaid for many years, and any measure which tended to correct this injustice naturally commended itself to the favor of the service at large. This was no small factor in overcoming opposition that would otherwise have asserted itself, and the far-reaching effect of incorporating the amendments relating to pay and retirement can not be overestimated.

When the bill was presented to the Congress, its provisions were carefully studied by all interested in naval affairs. While fully cognizant of the necessity of enacting into law the retirement features of the measure, the members of the Naval Committees thoroughly realized that the question of amalgamation was the most important in the bill. This particular feature, therefore, received careful consideration, and only a campaign of education brought a majority of the committee to its support. It seemed apparent to both Naval Committees that the proposition conflicted with the tendency of the age toward specialization, and that the doom of engineering in the Navy was inevitable unless compulsory means were taken to compel officers to train in that direction.

The measure was regarded by many as ill-advised because the bill did not explicitly make provision for compelling the performance of engineering duty. This objection appealed so strongly to certain members that the passage of the bill was imperiled by the insistence upon the part of some friends of engineering that special sections should be incorporated whereby this defect could be avoided. In answer to this contention it was shown that it would be extremely difficult to frame a law which would secure the desired result, since experience and observation upon the part of conscientious naval officers was absolutely essential before hard and fast rules could be made. It was the general opinion that the question of regulating the performance of engineering duty was one of administrative detail which the Bureau of Navigation could be depended upon to carry out, since the importance of engineering had been recognized by the Department in many official communications to the Congress. The Naval Committees were thus unofficially assured that departmental regulations and orders would be issued to overcome this anticipated weakness. It was also understood that when time and experience justified changes the Department would promulgate orders and regulations upon the subject.

It was rather a revolution than progression in naval development which occurred when the Congress enacted a law whereby every naval officer of the line had in the future to become a fighting engineer. This epigram of President Roosevelt aroused earnest discussion, and caused the question of naval matériel to be subordinated to that of the personnel. It declared for a policy which amazed even the British Admiralty. The opinion of continental powers can possibly be gathered from the declaration of a naval attaché, who informed me that either

the European navies had not an organization adapted to a modern warship, or else that the American service had committed itself to an error of policy which would require twenty years to correct. As there have been other American innovations which have amazed Europe and which have proved to be founded upon correct principles, the opinion of the continental powers as regards the personnel law may be equally erroneous. But where there is a radical difference in the training of the personnel, it is certain that there must be a great difference in the efficiency and strength of the several navies, and too much thought can not be given to the question as to whether or not our present policy is the correct one. While it has not been difficult to convince naval experts that the principle of amalgamation is correct, but few converts have been found outside the United States to the belief that the principle can be practically applied except through progressive development. The naval authorities in Europe are thus more than skeptical as to the utility of the measure, since they assert that it conflicts with the customs and traditions of the Navy as well as with the tendency of the times.

In measuring the results secured, it should be remembered that when the personnel law went into effect there were in the engine rooms of our war ships, in addition to an efficient commissioned Engineer Corps, an exceedingly well trained and intelligent complement of skilled machinists. These men had been drilled by engineer graduates of the Naval Academy, and a state of efficiency had been reached in our engine rooms that had not been surpassed by that of any other service. In the competitive examination that was held for the position of warrant machinist just after the close of the Spanish-American war the character and ability of the machinists of the Navy were put to an actual test. Almost without exception the successful competitors came from the naval ships. These men were not only well acquainted with the machinery of our war vessels, but they had been taught by example and precept the necessity of keeping every machine in a high state of efficiency. They had witnessed the courage and devotion to duty upon the part of the engineer commissioned officers, and thus had not only been made to implicitly obey, but they had been taught the necessity of efficiently directing affairs, so that when promotion was tendered such enlisted men they were competent to perform higher duties that could not be safely intrusted to those without naval experience.

Two-thirds of these warrant officers have now been continuously at sea since the passage of the personnel bill. In many instances these men had over ten years' previous service and in some cases as much as twenty years' training in the Navy. As all had to serve a year on probation before securing warrant rank, and as a majority anticipated securing a shore assignment at the end of their cruise, these incentives have been no small factors in keeping warrant machinists up to their work and in maintaining efficiency beneath the protective decks of our war ships.

The fact should be thus thoroughly appreciated that as regards the efficiency of the warrant machinist those now in the service are as a rule a picked body of men, who had not only received special training, but who had considerable experience in the several types of ships to which they have been assigned. Since the demand for skilled marine engineers is very great in the maritime marine, it will be difficult to secure warrant machinists from that source, and, therefore, the Navy will have to train this class of men. As it can not be expected that these

men will be content with less recognition and privileges than is accorded other warrant officers, the number, of necessity, must be increased.

These officers will demand, and it would seem as if they are justly entitled to receive, the same consideration as regards shore duty that is accorded boatswains, gunners, carpenters, and sailmakers. The Department, therefore, can not expect to keep these men continously at sea. A reasonable amount of shore duty will have to be given them or the Navy will lose the services of the elect. The personal inquiries that have been made at this Bureau as to the capabilities of the best of the warrant machinists show that the shipbuilding firms intend to draw upon the best of these men and that salaries will be offered which will induce the most efficient to leave the naval service in case these machinists are not to be put upon equality with the other warrant officers as regards shore assignments.

While the warrant machinists have had shop training and experience at sea, it can not be expected that they possess the necessary scientific training to enable them to take up the most important duties that were performed in the past by the commissioned officers of the old Engineer Corps. These men may have the skill to adjust bearings, set a valve, replace a water tube in a modern marine boiler, overhaul a pump, and possess the requisite knowledge for operating machinery with which they are familiar, but in matters of organization the services of more highly trained men are needed. There are great laws of mechanics, physics, chemistry, and thermodynamics which must be put to practical application by the chief engineer of a war ship. It is a thorough grasp of these principles, combined with practical sea experience and power of observation and study, which makes the competent marine engineer.

It is not my desire to disparage the work of the warrant machinists. These men are rendering useful and efficient service, and provision should be made whereby the elect might quickly secure commissions in the Navy. It is my great desire to encourage them and advance their material interests, but as a rule this class of officers can no more do the work of trained and educated engineers than can carpenters take up the duty of naval constructors, gunners assume the responsibilities devolving upon ordnance experts, or boatswains attain the skill and executive ability of skilled sea commanders.

The belief that warrant machinists, if competent to take charge of the machinery of a modern warship, will rest content with either the pay or position now accorded them is simply to invite another half century of internal strife in the Navy. It is nothing more than an attempt to revive conditions that existed when the screw propeller was first used. The machinists will simply tread the path that was broken by the officers of the old Engineer Corps, and success will be achieved by them in a short time, for the engineers taught them the lesson that great reforms can only be effected in a military service from pressure without rather than from efforts within the organization.

It has been because the belief prevails in some quarters that the experience of a single cruise in the engine room will fit junior officers for the duty of a chief engineer, and that the practical duties at sea of the old engineer officers can be taken up by the warrant machinists, that there has been continued retrogression in the engineering efficiency of the Navy. To sustain the opinion that there has been retrogression the attention of the Department is invited to the consideration of Senate

Doc. No. 175, Fifty-seventh Congress, first session, wherein the Paymaster-General of the Navy, in a report in answer to a Senate resolution, forwards data as to the costs of repairs to the naval vessels. This document is substantially a financial history of the ships of the new Navy, and shows the heavy expenditures incurred in keeping the vessels in a state of efficiency. This retrogression will not cease until at least one-fifth of the 1,800 commissioned officers, midshipmen, and warrant officers are assigned to engineering duty.

Many young line officers have shown decided aptitude for engineering work, and have been assigned to such duty. The number, however, who have specially interested themselves in the work has been too small for the best interest of the service. There have been some who have taken up the work in an amateur fashion and as a diversion. The injury to engineering efficiency from countenancing this kind of duty is very great, since it demoralizes the enlisted force in the engine and fire rooms, and tends to discredit the work in the estimation of those who should be made to interest themselves in the duty.

The principle of amalgamating the duties of the line and engineer officers is, however, in accord with the trend of modern development, and it is by reason of this fact that the proposition received the hearty and unqualified support of the engineering interests throughout the country. It was an official recognition, upon the part of the Congress, of the dignity and importance of the engineering profession. It was also an emphatic declaration on the part of the legislative assembly that an organization which was suitable for vessels of oak was not compatible for the needs of ships of steel, and that the men beneath the protective deck in the engine rooms and stokeholes were as much an integral part of the ship as the men who served and trained the guns. This legislation, however, assailed the traditions of the service, and it was not surprising that opposition developed when it was presumed that vested rights had been encroached upon. This opposition was powerless in its appeal to Congress to reject the measure. It commanded greater strength within the naval service, and it is this influence which stands in the way of a liberal and generous enforcement of the unwritten but well-understood provisions of the personnel law.

If the law is administered with a desire to make it a success, it will beyond a doubt give us the most efficient Navy in the world. It must, however, be administered in a way that will prevent junior officers from showing a decided preference for deck duty, and this result can in great part be secured by refusing to promote those who have not had actual and continuous experience in the engine room, and whose semi-annual reports as to fitness do not show that they have been zealous and proficient in the performance of engineering duty.

It is with pleasure that I bear testimony to the fact that during the past year a more determined effort has been made to carry out the intent of the personnel law to make every officer an efficient engineer. Junior officers of the line are now assigned by departmental order to special duty as chief engineers of vessels, and thus these young men are not only made to identify themselves more closely with the work, but it is possible to hold them to a more rigid responsibility for the character of the engineering duty performed.

It is regrettable, however, that more junior officers are not detailed for duty in the engine and fire rooms, since it is as essential to provide for the needs of the future as the demands of the present. The great

scarcity of officers has probably made it difficult to arrange for alternation of duty on the scale contemplated when the personnel law was passed. There has been, however, no substantial abridgment in the number of officers assigned for deck duty, and it is an undoubted fact that fewer commissioned officers are now doing engineering duty than when the law went into effect. It will be said that there are 145 warrant machinists assisting these commanding officers, but practically all these warrant machinists were in the engine rooms of our warships when the law was passed. At that time the warrant machinists were in the Navy, but without the promotion that has since been justly given them.

There has been no hesitancy to intrust responsible duties in the engine rooms to warrant machinists, and surely many of the boatswains and gunners are capable of performing routine duty on deck, thus permitting a considerable number of junior officers of the line to be assigned as assistant inspectors of machinery on shore. There can be no more risk in trying the experiment of utilizing the services of boatswains and gunners as watch keepers on the bridge than in placing machinists in charge of the engine-room watch. It would appear as if the deck experiment would be the less dangerous one, since in times of emergency either the captain, executive officer, or navigator is within immediate call of the officer of the deck.

By reason of the inadequate number of officers assigned to engineering duty on shore, the interests of the service have been greatly endangered. There is not a naval station nor shipyard where more officers are not needed for engineering duty. There is now in course of construction 250,000 horsepower of boilers of the Babcock & Wilcox design, and the only officer available for this duty is a veteran of the civil war. This officer is on the retired list, having sought voluntary retirement after forty years of active service. By reason of his special aptitude for the work the Bureau has continued him on duty. The task of inspecting marine boilers, of a design that the Bureau believes may be eventually selected as the approved type for the Navy, should not be intrusted to junior officers who might be unexpectedly ordered to sea at short notice. The Bureau would be pleased, however, to have several junior line officers ordered as assistants to the senior inspector of these boilers, but such important duty can not be assigned to juniors who have not had extended engineering experience and training.

About 125,000 horsepower of boilers of the Niclausse design are likewise in course of construction, and only one officer is available for this work. The good of the service would demand that several junior officers be detailed as assistants to each of the engineer inspectors of these boilers. The modern naval officer can not efficiently operate machines unless he has had some experience in superintending their construction and installation. In the effort to keep the ships going at sea important duties on shore are being slighted, and surely more officers should be detailed for this special work.

The personnel law contemplated that officers should reach command rank before they attained the age of 45 years, and that those doing engineering duty only, when attaining the rank of commander, should not perform service at sea. This provision was founded upon the opinion that any officer of scientific training and education electing to do engineering duty only, and with twenty-five years of naval experi-

ence, could render the best service to the Navy by supervisory work on shore, since physical vigor and age were important factors in the performance of engineering duty at sea. Those officers doing engineering duty only who are now beyond that age could be best employed in the inspection work on shore, since there is an urgent demand in the various naval stations and shipyards for officers possessing this special experience and training. But some junior officer should be in training to relieve every one of these seniors.

It is pertinent to call attention to the fact that the competition between shipbuilders for naval work is more keen than it ever was before, and that there is not the margin of profit that was obtainable in the past by the contractors. Many of the shipbuilding plants now sublet considerable of their work, and this entails more rigid inspection upon the part of the Government official. The interests of the service are not being subserved by changing the inspectors frequently, for the naval experts are pitted against highly paid specialists who are not only loyal and zealous in representing the cause of their employers, but who have an advantage over the naval officers by reason of their long assignment in connection with the work in hand.

By reason of the inadequate number of officers employed in the inspection of naval machinery, it is certain that the ships now in course of construction will not be the equal of those built in the past so far as relates to the motive power. This opinion is based upon careful study and experience, and is meant in no manner to reflect upon the integrity of the shipbuilders. The naval specifications are much more severe than those for mercantile work, and these requirements can only be obtained by detailing as inspectors efficient and experienced officers whose education and training at sea gives them an intimate and professional knowledge of the needs of a war ship. The shipbuilders fully recognize the fact that an efficient and conscientious naval inspector, who holds them to a rigid and yet not vexatious responsibility, is in reality of great benefit to them, for such an officer when requested to tender advice is ever ready to give information. It has been repeatedly the case that the advice of such inspector has prevented the contractors from making mistakes which would have caused financial loss and long delay to the shipbuilding firms.

The existing policy of overloading the naval inspectors is therefore not to the permanent benefit of the contractors. While it is true that an unscrupulous firm might secure a temporary advantage, the well established and reliable companies suffer pecuniary loss by vexatious delays. As the Department calls upon such inspectors for specific duties, it is impossible for them at times not to delay the contractors by the failure to inspect completed work. It is exceedingly probable that the courts will yet be called upon to determine the responsibility of the Department in this matter. Where there is an inadequate number of inspectors there is likely to be untrustworthiness in the character of the work, delay in construction, and heavy financial loss to the builders.

The inadequate force assigned to engineering duty in naval matters has excited comment in the engineering world. One has but to read the editorial comments of the marine engineering periodicals to note how well informed the general public is in regard to engineering conditions in the Navy. The present age being distinctively an engineering one, there are thousands of educated and scientific engineers

scattered over the country who take a deep interest in the design, construction, and operation of the war ship. These men are closely watching the effect of the personnel law in the passage of which the engineering profession was no small factor. Whether or not it is its prerogative, the engineering profession feels that it is specially charged to see that the motive power of the Navy is kept efficient. The events of the past have shown that the profession is not powerless to accomplish its purpose in this respect, for it will always be accorded a careful hearing by the executive head of the Navy Department and by the Congress.

While the personnel law is correct in principle, there is a general feeling among engineers that the purpose and spirit of the measure is not being carried out. Of the 1,425 commissioned officers and midshipmen, 78 in accordance with law are doing engineering duty only. Possibly 70 other junior officers of the line are giving all or half of their time to the performance of engineering work. Not over one-eighth of the officers below the rank of commander are thus doing engineering work. One would have to possess strong imaginative powers to believe that either the present or future engineering efficiency of the Navy is being looked out for under such circumstances. While there are 145 warrant machinists for duty in the engine room there are 286 other warrant officers for deck duty.

In the vessels of the merchant marine there are as many engineers as deck officers, and surely a proportion of four deck officers to one engine room officer should be ample even in a modern navy. Excluding the marine officers, who have charge of the secondary batteries on some of the large ships, there are 1,856 warrant officers, midshipmen, and commissioned officers. Allowing one-fifth of this total number for engineering duty ashore and afloat, there should be at least 370 assigned to this work instead of the 300 who are now doing the duty. The request of the Bureau that such a proportion should be assigned for engineering work can not be regarded as excessive. It is certain that there are too few now doing such duty, and the continuance of the present policy will give us a fleet of war ships whose future engineering efficiency will more resemble the defeated than the victorous squadron at the battles of Santiago and Manila.

In making an earnest plea for the complete administration of the personnel law, no element of personal consideration has influenced my action. I am a convert to, and not an original advocate of, the idea. I am most concerned that engineering efficiency in the Navy shall not be sacrificed, and that the great fighting machines, whose motive power has been designed at this Bureau, shall not fail in the work expected of them because they are not properly cared for.

A navy without highly trained and technically educated engineers is a navy that will not stand the test of battle. It is an outworn system which attempts to have the mediaeval traditions of the sailing age prevail on board the fighting machines of the present generation.

The result of forty years' experience in the Navy and the warning notes sounded by hundreds of persons within and without the service compels unequivocal declarations to be made as to the condition of affairs. Although these conditions are somewhat better than they were a year ago, we are passing through a period of engineering inefficiency which is not only subjecting the nation to great expense but is inviting disaster. The present condition of affairs can not and

should not be permitted to continue. The Navy Department and the Congress may be spurred to action from strong influences without the service unless a greater proportion of the commissioned personnel is assigned to engineering duties. As the engineering profession is carefully noting existing conditions, would it not be wise to do the work of strengthening the service along engineering lines within the naval organization rather than to have the Congress again take up the matter, when the formation of a separate corps of naval engineers, endowed with military rank and authority, will not only be a possibility but a decided probability?

It may be asked why the time has not arrived when experiments should be tried of interpreting the personnel law more in the line of engineering progress and opinion. The fact should be emphasized that those who hold to this belief do not simply criticise existing methods. Such action would be inexcusable, for no loyal and patriotic man will expose the military weakness of his country until he has shown wherein improvement is possible. Therefore, the friends of engineering, in the belief that the law is correct in principle but maintaining that it has been construed in a manner that is not conducive either to present or future engineering efficiency, request the Department to give careful consideration to the following recommendations:

These recommendations relate to increasing the engineering influence, efficiency, and duties of the commissioned personnel; of improving the condition and efficiency of the engineers enlisted force; and of intrusting to the distinctively Engineering Bureau of the Department the design, construction, installation, and operation of all machinery other than that of ordnance.

First. The establishment at the Naval Academy of an engineering experimental laboratory. The purpose and necessity for such an institution, and its relation to the question of an efficient naval personnel is well recognized in Germany, where engineering as a profession has been accorded even a higher status than it has in America and England. The German admiralty has such a laboratory at Charlottenburg, and it is the belief on the Continent that the advance of Germany in naval and marine development is in no small part due to the magnificent work done at this station. The value of such an engineering laboratory to the Navy and to the nation, and its far-reaching influence upon technical education at Annapolis is of such great importance that it has been particularly referred to in this and preceding annual reports.

Second. The establishment at the Naval Academy of a postgraduate course in engineering. If technical instruction of an advanced nature should be provided at Annapolis for junior officers who have special engineering talent, the advantages would be of a threefold nature, since the junior officers, the Naval Academy, and the service at large would be benefited by the work. The junior officers would be better fitted for undertaking the more important engineering duties of the future. The Naval Academy would be brought in closer relation with the higher technical institutions of the country, and this would give the Annapolis institution an opportunity to compare educational methods, so that, where necessary, there could be improvement effected in the character of the instruction. The service at large would be the gainer by reason of the fact that every officer who took

a course in postgraduate work would be a personal factor in preventing any decrease in engineering efficiency.

Third. The detail of a junior officer of the line as an understudy and assistant to every officer on shore doing engineering duty only. Practically the only officers detailed as inspectors of machinery and engineering material are the few officers who have elected to do engineering duty. These officers by reason of their training and extended experience are particularly well qualified for the duty assigned them, but everyone of them is overworked, and the good of the service would be subserved by detailing someone to assist them. The junior officers assigned to this work would not only render a direct service to the Department in relieving their seniors of routine duties, but these understudies would be fitted for doing all the work in the future. One of the great menaces to naval efficiency is the fact that practically no junior officers of the line are doing engineering duty on shore. There can be no more important duty within the assignment of the Department than the training of an adequate complement of junior officers so that they will be fitted to perform the distinctively engineering work of the future.

Fourth. That the junior officers of the line, by specific orders of the Department in connection with the warrant machinists, be placed in charge of the machinery of all torpedo boats and destroyers, auxiliary vessels and yachts, gunboats and small cruisers, as well as monitors and nondescript vessels. It is simply discrediting engineering to detail an officer of twenty years' experience to take charge of machinery of a small cruiser. In several instances officers of this experience have been withdrawn from important shore duties, where the Department had great interest at stake, to perform service at sea which ought to be done under existing conditions by junior officers of the line.

Fifth. A general order should be issued of such emphatic nature that the junior officers of the line would thoroughly appreciate the fact that promotion would be denied those officers who had not performed duty in the engine room, or who had not sought work of this character. Such an order would prevent a preference being shown deck duty, for however unattractive the work in the engine room might be, there would be no effort to avoid it if lack of such experience interfered with promotion.

Sixth. That in view of the urgent demand for officers, and by reason of the fact that the Naval Academy is unable to send forth sufficient number of graduates, that a law be enacted empowering the Secretary of the Navy to permit graduates of the technological colleges to compete for acting commissions in the service. That the successful competitors then be ordered to the Naval Academy for a one year's course of instruction in ordnance, gunnery, and navigation, and that they then be sent to sea on board a modern warship for one year for practical instruction. That those who successfully complete the course prescribed by the Navy Department, both at the Naval Academy and at sea, be then given permanent commissions in the regular service. Such a policy would give us highly desirable officers for our immediate needs. They would not have that intimate knowledge of naval customs and traditions that had been acquired by the Naval Academy graduates, but they would have a much more rounded education, since the require-

ments for entering the technological colleges are much higher than those for entering the Naval Academy. From this source it is possible to secure some excellent men, and a reserve of trained officers for future contingencies could be educated in this manner. Such a system of increasing the personnel would bring the service nearer the hearts of the people, for in the course of a decade the alumni associations of every great university would have some of its representatives holding commissions in the line of the Navy.

Seventh. That one hundred more warrant machinists be appointed. There is important work on shore for this class of officers to do, and the detail of warrant machinists who have been continuously at sea for years to temporary shore assignments would not only be an incentive to keep them in the service, but it would better fit them for carrying on their duty afloat.

Eighth. That the system of instructing machinists second class, now in operation at the New York Navy-Yard, be extended so that this training might be given at every leading naval station. The success of the school at the New York Navy-Yard shows a necessity for extending the work. Once let the young mechanics of the country learn of the opportunity to receive this professional and practical instruction, and an incentive to enlistment would be created that would make good the deficiency now existing in the number of machinists requisite for the ships of the Navy. The good results of establishing this school will not only be manifest in the decreased cost of repairs to warships, but in the higher efficiency of these men when reporting on seagoing vessels.

Ninth. That in view of the fact that the water-tube boiler must soon of necessity be the principal type in the naval service, that the status and pay of the water tenders be increased to a degree commensurate with the importance and nature of their duties. Considering the character of the duty performed by these petty officers, the water tenders are the most inadequately recognized and poorest paid of any of the enlisted force of the Navy.

Tenth. That the title of the Bureau of Steam Engineering be changed to that of the Bureau of Engineering, and that there be placed under its cognizance all machinery which is distinctively engineering in character, other than that of ordnance. In view of the fact that the line officers of the future must have a knowledge of mechanical, electrical, pneumatic, and hydraulic engineering, there should be a bureau at the Navy Department whose province it would be to design and have control of all of the machinery of this character. It can not make for naval efficiency to call upon an officer to be responsible for the repair, care, and operation of a mechanical contrivance without permitting such officer to determine the character and design of the appliance. There is much in the word "engineering," and if the naval service will ally itself with the profession at large, a moral and substantial support will be tendered the organization that will be a tower of strength in times of emergency. The amalgamation of the duties of the line and engineer officers can only be accomplished by giving engineering a status that will command the respect and esteem of everybody within the organization, and this purpose can be greatly aided by enlarging the scope and influence of the only distinctively engineering bureau that now exists by operation of law.

Estimates of appropriations required for the service of the fiscal year ending June 30, 1904, by the Bureau of Steam Engineering, Navy Department.

Detailed objects of expenditures, and explanations.	Estimated amount which will be required for each detailed object of expenditure.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for the current fiscal year ending June 30, 1903.
SALARIES.			
Chief clerk	$2,000		
One clerk, class 3	1,600		
One clerk, class 2	1,400		
One clerk, class 1 (this clerk is employed in the office of the Assistant Secretary of the Navy)	1,200		
One assistant messenger	720		
Two laborers	1,320		
One draftsman, class 2	1,400		
One assistant draftsman, class 1	1,200		
One stenographer and typewriter, Class E	1,000		
Do	900		
		$12,740	$12,740

One clerk of class 2 is regularly employed in this Bureau and borne on the rolls of the Judge-Advocate-General's Office, $1,400 per annum.

Statement in detail, showing the number of persons employed during the previous year and the rate of compensation of each, under appropriations "Increase of the Navy," or other general appropriations, as required by the legislative, executive, and judicial act approved Apr. 17, 1900, on the rolls of this Bureau Sept. 1, 1902.

	Per diem.	Per annum.	Total.
One clerk	$4.00	$1,252.00	$1,252.00
One writer	3.52	1,101.76	1,101.76
Two writers, each	3.28	1,026.64	2,053.28
One special laborer	2.48	776.24	776.24
Three laborers, each	2.00	626.00	1,878.00
One carpenter	3.04	951.52	951.52
One chief draftsman	7.04	2,203.52	2,203.52
Two draftsmen, each	6.48	2,028.24	4,056.48
Three draftsmen, each	6.00	1,878.00	5,634.00
Three draftsmen, each	5.52	1,727.76	5,183.28
Two draftsmen, each	5.04	1,577.52	3,155.04
Total			28,245.12

None of the above employees are "below a fair standard of efficiency" for the ratings under which they are severally employed, with exception of two laborers, who are partially disqualified on account of physical disabilities.

STEAM MACHINERY.			
For completion, repairing, and preservation of machinery and boilers of naval vessels, including cost of new boilers; distilling, refrigerating, and auxiliary machinery; preservation of and small repairs to machinery and boilers in vessels in ordinary, receiving and training vessels; repair and care of machinery of yard tugs and launches (act July 1, 1902)	2,190,000		2,190,000
For purchase, handling, and preservation of all material and stores; purchase, fitting, repair, and preservation of machinery and tools in navy-yards and stations, and running yard engines (act July 1, 1902)	1,200,000		1,200,000
For incidental expenses for navy vessels, yards, and the Bureau, such as foreign postage, telegrams, advertising, freight, photographing, books, stationery, office furnishings, and instruments (act July 1, 1902)	15,000		15,000
		3,405,000	3,405,000
CIVIL ESTABLISHMENT.			
Navy-yard, Portsmouth, N. H. (act July 1, 1902):			
One clerk to department $1,200			
One messenger 600			
	1,800		1,800

Estimates of appropriations required for the service of the fiscal year ending June 30, 1904, etc.—Continued.

Detailed objects of expenditures, and explanations.		Estimated amount which will be required for each detailed object of expenditure.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for the current fiscal year ending June 30, 1903.
CIVIL ESTABLISHMENT—continued.				
Navy-yard, Boston, Mass. (act July 1, 1902):				
One clerk to department		$1,400		$1,400
Navy-yard, Brooklyn, N. Y. (act July 1, 1902:				
One clerk to department	$1,400			
One writer	1,000			
One messenger	600			
		3,000		3,000
Navy-yard, League Island, Pa. (act July 1, 1902):				
One clerk to department		1,200		1,200
Navy-yard, Washington, D. C. (act July 1, 1902):				
One clerk to department		1,200		1,200
Navy-yard, Norfolk, Va. (act July 1, 1902):				
One clerk to department	1,300			
One messenger	600			
		1,900		1,900
Naval station, Port Royal, S. C. (act July 1, 1902):				
One clerk to department		1,200		1,200
Navy-yard, Pensacola, Fla. (act July 1, 1902):				
One writer		1,000		1,000
Navy-yard, Mare Island, Cal. (act July 1, 1902):				
One clerk to department	1,400			
One writer	1,000			
One messenger	600			
		3,000		3,000
Navy-yard, Puget Sound, Wash. (act July 1, 1902):				
One clerk to department	1,200			
One writer	1,000			
		2,200		2,200
			$17,900	17,900
IMPROVEMENT OF PLANT.				
Navy-yard, Boston, Mass.:				
For electric cranes for foundry, boiler shop, and smithery, and for some large and powerful machine tools to complete equipment of shops (submitted)		60,000	60,000	
Navy-yard, Norfolk, Va.:				
For cranes and heavy tools to equip the shops as altered (act July 1, 1902)		25,000	25,000	25,000
Navy-yard, Charleston, S. C.:				
For complete equipment of shops already authorized (submitted)		100,000	100,000	
United States Naval Academy, Annapolis, Md.:				
For building to be used as an experiment station and testing laboratory in the department of marine engineering and naval construction, the building to be 2 stories high and about 110 feet by 150 feet, and conform in design and construction with the new buildings now being erected at the Naval Academy (submitted)		250,000		
For the complete equipment of this building with all the necessary appliances and apparatus as an experiment station and testing laboratory (submitted)		150,000		
			400,000	

Respectfully submitted.

GEO. W. MELVILLE,
Engineer in Chief, U. S. Navy, Chief of Bureau.

The SECRETARY OF THE NAVY.

REPORT OF THE PAYMASTER-GENERAL OF THE NAVY.

CHIEF OF THE BUREAU OF SUPPLIES AND ACCOUNTS.

NAVY DEPARTMENT,
BUREAU OF SUPPLIES AND ACCOUNTS,
Washington, D. C., October 15, 1902.

SIR: I have the honor to present the report of the Paymaster-General of the Navy upon the operations of the Bureau of Supplies and Accounts for the fiscal year ending June 30, 1902, accompanied by the estimates for the coming year, prepared in accordance with the Department's instructions of July 3, 1902, and tabulated statements, as follows:

A.—General financial statement.
B.—Statement showing expenditures of money and material at shore stations and objects to which applied.
C.—Statement showing operations of the naval supply fund to June 30, 1902, and the account of the naval supply fund for the fiscal year.
D.—Statement showing the cost of maintenance of and improvements at navy-yards and stations.
E.—Statement showing the value of real estate and chattels and machinery plant at the several navy-yards and stations.
F.—Statement of payments through the Paymaster-General's Office on contract, open-purchase, and open-contract vouchers.
G.—Statement showing the value of supplies on hand July 1, 1901, the receipts from purchase and other sources, the expenditures during the year, and the balance on hand June 30, 1902.
H.—Statement of the value of stores received and expended on board ships in commission.
I.—Statement showing cost of maintaining ships in commission.
K.—Statement of public sales of Government property.
L.—Exhibit showing volume and distribution of business under the Bureau at the various home stations.
M.—Statement showing receipts and expenditures of provisions, contingent, clothing, and small stores, and balances on hand June 30, 1902. Also account of the clothing and small-stores fund for the fiscal year.
N.—Schedule of proposals received.

These statements cover all transactions involving expenditures for the naval establishment, and show in principal items as follows:

Total credits, including balance from last fiscal year	$139, 583, 685. 43
Total debits	73, 501, 054. 87
Leaving a balance of appropriations on June 30, 1902, of	66, 082, 630. 56
Amount drawn from the Treasury	66, 893, 983. 08
Expenditures on account of construction of new ships, including labor and material	14, 392, 921. 77
Cost of repairs to ships and equipage, at home and abroad	$5, 802, 101. 66
Cost of maintaining ships in commission, including pay of officers and men, together with the value of subsistence or commutation thereof, and incidental expenses and material expended	14, 331, 678. 78
Expenditures on account of the Marine Corps	2, 393, 830. 17
Cost to the Navy:	
Of the Light-House Establishment	82, 611. 10
Of the Fish Commission	70, 924. 01
For arming and equipping the naval militia of the several States, including material furnished	110, 574. 19
The deposits of savings by seamen during the year amount to	385, 059. 60
And the repayments	328, 426. 40
Total amount to the credit of the fund on June 30, 1902, was	601, 886. 16
Interest paid at 4 per cent per annum upon repayment amounted to	18, 875. 55

THE PAY CORPS.

Through the constantly growing demands of the service, there is an increasing strain upon the number allowed to the corps by law. Serious embarrassment is felt in finding pay officers for ships in commission and for duty at the various naval stations. At this time of writing, of the 137 allowed by law, 73 are on sea duty; 56 are on shore duty, settling accounts or changing stations; 4 are unavailable for duty through sickness or other cogent reasons, and there are four vacancies. Much difficulty is felt in making the necessary reliefs of officers whose terms of duty at sea have expired, and it is impossible under existing conditions to grant the leave of absence that is customary upon an officer's return from a cruise. At this time there is not an officer off duty and available for a sudden call, such as may happen at any time through an unexpected casualty.

It will be seen from the data given above that the corps is without elasticity, there being no officers in excess of the several posts of duty that may be enumerated. Service on the Asiatic Station is particularly trying to the health, and the Department therefore regards two years as a cruise. Condemnations by medical survey are frequent, involving immediate measures for the relief of the officer condemned. This it is scarcely possible to accomplish in less than two months, owing to the distance. Meantime the best shift possible has to be made; sometimes duties are doubled, thus imposing additional strain and responsibility upon officers already sufficiently burdened; or sometimes on board ship the duties have to be taken up by another officer, not of the Pay Corps, until a relief can be duly provided. When it is remembered that besides the unexpected casualties as above suggested all officers on duty in the Philippines have under the Department's practice to be ordered home at the end of two years' service; that all pay officers are entitled by law to at least twenty days for the settlement of accounts; and that much time is required to effect a change of officers on distant stations; with these conditions in mind it is apparent that for efficient administration there must be a certain percentage of officers allowed in addition to the number of assignments that may be actually foreseen or counted as requiring each an officer.

At the present time we are not only without the margin necessary to provide for officers in transit, in hospital, or settling accounts, or on leave of absence, but we are without a sufficient number for the posts of duty now actually existing or within sight in the near future. There are at least thirty ships which within three months will need pay officers, either as reliefs or by reason of new commissioning. No ships are expected to go out of commission within that time. The officers needed for duty afloat can be obtained only by taking them from duty ashore, from which they can not be spared without detriment to the public service. It must be remembered that while a pay officer is needed for each ship in commission (omitting torpedo boats and other small craft), the most important duties of the Pay Corps are ashore, in connection with the supply department of the Navy and on disbursing duty at navy-yards. In the present shortage of officers, those needed for duty afloat can be obtained only at the expense of the offices ashore, which must be depleted to their detriment. This involves either a doubling of duty, requiring one pay officer to take charge of two offices, or the detaching of assistants from the more

important offices. Either course is tolerable only as a makeshift, and either one entails a loss in efficiency. The only available relief from this state of affairs has been through ordering retired officers to shore duty, and this has been done so far as practicable; nine of them being now in charge of offices ordinarily assigned to officers on the active list.

The condition here pointed out can have but one remedy, an increase of the corps. This was asked for last winter and a bill approved by the Department and submitted to Congress was passed by the Senate, but failed in the House. Since then our needs have become even more pronounced, and the Bureau urges a favorable recommendation on the subject by the Department.

NAVAL SUPPLY FUND.

The work accomplished by means of the supply fund has been greater in volume and variety during the past year than ever before. The fund now amounts to $2,700,000, which is allotted to the several stations in sums proportioned to their relative importance, ranging from $864,000 for the New York Navy-Yard to $10,000 for that at Pensacola. The number of different items of supplies carried in stock at New York, as shown by the stock accounts, is over 7,500. Notwithstanding the large sum assigned to the fund and the great variety of supplies undertaken to be carried, yet, as will be shown hereinafter, the results are satisfactory neither to the Bureau nor to those who depend upon the system to furnish, as needed, the vast range of ordinary commercial commodities that are in constant demand. The needs of a navy-yard for purposes of construction of all kinds—ships' repairs, manufacture of equipage, new buildings, etc.—are ever increasing in quantity and variety; and, notwithstanding the earnest efforts of those concerned with administering the fund, it has proved impossible with the sum authorized by law to maintain stock in satisfactory variety and quantity.

The fund will fulfill its function only when purchases can be made in sufficiently large quantities at a time to avoid depletion at certain points. Of course, such depletion is to be expected in the supplies most commonly called for, and is now frequently experienced through the limitation imposed by the sum total of the fund. Careful watch must be kept upon the balance to its credit in the Treasury before authorizing new purchases, and this balance is a constant monitor to cut down or disallow estimates of stores needed at the various stations. For the reasons here outlined, I suggest that Congress be asked to increase the fund by $500,000. This can be done without swelling the year's appropriations by authorizing the transfer of that sum to the fund from the unexpended balance of the appropriation "Provisions, Navy, 1902." That appropriation has now to its credit in the Treasury about $550,000, this surplus above the year's needs having arisen through a shortage in the enlistments authorized by law and through a gain due to the difference between the actual cost of the ration and its commutation value as fixed by law and used as the basis of the estimates. Ample provision will still be reserved for any items of adjustment or charge to the appropriation yet to be made in the books of the Treasury if the transfer of $500,000 to the supply fund shall be authorized at the coming session, and, for the reasons given, I urge that this proposition be submitted to Congress with a favorable recommendation.

THE CLOTHING FACTORY.

The total value of garments, etc., made in the clothing factory during the fiscal year 1902 was $360,942.95—the largest output in its history.

With the present plant about 40,000 garments can be turned over for issue. This quantity can be increased to 60,000 by adding more cutting machines, baling presses, etc., with an enlarged force.

THE NAVY RATION.

The naval appropriation act for the fiscal year 1903 provided for an increased ration for the Navy. The Bureau proceeded immediately to purchase the necessary stores and was able to obtain a sufficient supply for immediate needs at reasonable prices. These are now being distributed, and in a short time the whole enlisted force of the Navy will be subsisted in accordance with the new law.

STOREHOUSES.

The increased demand on the resources of this Bureau renders an enlargement of the storage plants at the navy-yards, Boston, Washington, Norfolk, Mare Island, and Puget Sound, imperative. These facilities are inadequate for the needs of the service, and unless relief in this respect is afforded at an early date, the efficiency of the Navy as a whole must suffer.

At Norfolk, Washington, and Boston the buildings are of an obsolete type, in which modern storehouse appliances can not be placed to advantage, and, because of the inflammable nature of the material used in their construction, are extremely liable to destruction by fire. At Puget Sound the storehouse is a small two-story nonfireproof building, with a capacity much below present requirements, and with the rapid development of this yard it is already inadequate as a general storehouse. As there is no other building that can be utilized for the housing of supplies, the situation is a cause for anxiety.

While a small section of the storehouse at Mare Island is of comparatively modern nonfireproof construction, a greater part is old, not well adapted to the purpose for which it is used, and not fireproof.

In addition to the improvements above suggested, buildings Nos. 33 and 31 (the clothing factory), in the New York Navy-Yard, should be fireproofed, and the storehouse at the naval station, San Juan, P. R., should be remodeled.

PENALTIES ON CONTRACTS.

The Bureau was greatly gratified at the Department's decision of June 30 relative to penalties for belated deliveries of supplies purchased by contract. The Bureau has constantly favored holding contractors rigidly to the terms of their contracts. It is believed that these contracts are sufficiently elastic to admit of the waiving of penalties for any cause for which the contractor is not directly responsible, and it is thought that the contract, once signed, should be quite as binding upon the contractor as to the time for delivery as it is in regard to prices and specifications. Since the introduction of the penalty clause in contracts supplies have been delivered more promptly and the interests of the Government have unquestionably been better served than before.

ADVANCE PAYMENTS FOR SERVICES.

Attention is invited to the following extract from the annual report of the Comptroller of the Treasury, September 27, 1901, which describes with great clearness a difficulty that is constantly felt by the Bureau in its relations with the business world:

I submit for your consideration and the consideration of Congress the following recommendation for a change or modification of existing law:

It is provided by section 3648, Revised Statutes, that—

"No advance of public money shall be made in any case whatever. And in all cases of contracts for the performance of any service, or the delivery of articles of any description, for the use of the United States, payment shall not exceed the value of the service rendered or of the articles delivered previously to such payment."

The accounting officers of the Government for more than half a century have experienced difficulty in administering this provision of law. The business interests of the Government have grown with the business of the country, and we are confronted now with the fact that the business interests of the country, in certain instances, absolutely refuse to render service for or furnish certain articles to the Government on a credit basis. The Government, in the transaction of its business, among other things, is in constant need of express service and of light and water for its various and scattered public buildings; also of telephone service, and daily, weekly, and monthly publications. I have only mentioned the most important items which those furnishing them refuse to furnish to the Government on a different basis from that on which they furnish them to their individual patrons, viz, payment in advance of the things furnished or services rendered. Such payment in advance is prohibited by this law. The Government must either do without these absolute necessities or the accounting officers are compelled to wink at a violation of a law. I have been constantly engaged in winking during my incumbency of this office. In my judgment, discretion should be vested in the several heads of departments, independent officers, and such others as have occasion to make purchases or secure services for the Government, to waive the provisions of this statute relative to payment in advance for such articles or services. The Government should accommodate itself and its laws to the business laws and usages of trade when it enters the field of trade, just as an individual or corporation should.

The Bureau believes with the Comptroller that "the Government should accommodate itself and its laws to the business laws and usages of trade when it enters the field of trade," and accordingly urges that section 3648, Revised Statutes, be amended by adding the following clause to the first sentence:

except when required by commercial usage to secure performance, certificate to that effect to accompany vouchers rendered to the accounting officers of the Treasury.

The statute would then read as follows:

No advance of public money shall be made in any case whatever, except when required by commercial usage to secure performance, certificate to that effect to accompany vouchers rendered to the accounting officers of the Treasury. And in all cases of contracts for the performance of any service, or the delivery of articles of any description, for the use of the United States, payment shall not exceed the value of the service rendered or of the articles delivered previously to such payment.

MODIFICATION OF LAW GOVERNING PURCHASES.

Section 3709, Revised Statutes, requires that—

All purchases and contracts for supplies or services in any of the Departments of the Government, except for personal services, shall be made by advertising a sufficient time previously for proposals respecting the same, when the public exigencies do not require the immediate delivery of the articles or performance of the service. When immediate delivery or performance is required by the public exigency, the articles or service required may be procured by open purchase or contract, at the places and in the manner in which such articles are usually bought and sold or such services engaged, between individuals.

This law, enacted more than forty years ago, permits no departure from advertising for supplies or services save when "immediate delivery or performance is required by the public exigency." Strict compliance with this law often entails expense and delay that are unnecessary and vexatious. The conditions of business have materially changed since 1861; and while the principle of buying under public competition remains as sound now as then, there are large classes of supplies for which competition can be obtained as well at open purchase after inviting bids as by the expensive and time consuming process of advertising. The effect of large industrial combinations is in certain lines of business to make prices uniform, and agents are often under penalty not to sell below the rate as fixed by those controlling the market. In such cases the Government has much to lose in time and expense by the slow process of advertising. On the other hand, by buying at open purchase, after publicly posting projected purchases in the purchasing offices and sending written proposals to dealers for filling in and return as formal bids, the principle of competition is preserved and the rights of all legitimate business men to strive for public business are observed.

Again, under the operation of our patent laws, stimulating the genius of invention, the most desirable kinds of machine tools, devices, and implements of all kinds are of a proprietary nature, and are sold at fixed rates, frequently by authorized agents only. In these cases, too, advertising is an empty and expensive form.

And, lastly, there is necessary at every navy-yard a multitude of purchases from day to day of articles whose future need is foreseen, and therefore not constituting an exigency, but of so small value as to nullify any advantage to be gained by advertising. Advertising is expensive; and purchases of this kind, if made by formal contracts, swell the Bureau's work to a degree far beyond any possible benefit, and limit its attention to really important matters.

The Bureau recommends, therefore, that section 3709, Revised Statutes, be amended by adding the following:

Provided, That if the delay incident to advertising would be detrimental to the interests of the public service, purchases may be made after public competition in the open market, in the discretion of the proper administrative or executive officers, when in their opinion, considering the cost of advertising and the conditions existing at the time, equally or more advantageous terms can be secured thereby than by public advertisement in the newspapers, or when the amounts involved are small, and proprietary articles which, by their nature, are barred from general competition, shall not be subject to advertisement.

ADVERTISING IN THE DISTRICT OF COLUMBIA.

The act of January 21, 1881, prescribes that—

All advertising required by existing laws to be done in the District of Columbia by any of the Departments of the Government shall be given to one daily and one weekly newspaper of each of the two principal political parties, and to one daily and one weekly neutral newspaper.

Repeal of this law is recommended for the reason that newspapers as described are not necessarily published in the District, and that if published there is no certainty that all of the six are of the kind that circulates in the business world, or outside of the city of Washington. It is believed that the general statute governing advertising (sec. 3828, R. S.) is sufficient for, and should apply to, the District of Columbia.

SENATE BILLS ON THE CALENDAR.

Attention is invited to the following bills introduced in the Senate on the 9th of December last by the chairman of the Committee on Naval Affairs, and now on the Calendar, viz:

S. 1105, to fix the compensation of pay clerks;
S. 1107, limiting the liability of sureties on bonds of officers of the Navy;
S. 1110, authorizing an inspector of accounts;
S. 1111, amending section 3719, Revised Statutes, relative to guaranties on proposals for naval supplies.

These measures were submitted to Congress with the approval of the Department, and are all of importance, for reasons assigned in transmitting them to the naval committees; and it is earnestly recommended that they be urged for enactment at this winter's session.

Very respectfully,

A. S. KENNY,
Paymaster-General U. S. Navy.

The SECRETARY OF THE NAVY.

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REPORT OF THE SURGEON-GENERAL U. S. NAVY.

DEPARTMENT OF THE NAVY,
BUREAU OF MEDICINE AND SURGERY,
Washington, D. C., October 1, 1902.

SIR: In obedience to instructions contained in Department's letter of July 3, 1902, I have the honor to submit a report of the operations of this Bureau for the past year, accompanied by a set of annual estimates for the fiscal year ending June 30, 1904, and a statistical report showing the health of the Navy for the year 1901. The report also embraces a statement of the condition of the naval hospital fund, the naval medical establishment, and other matters of interest pertaining to the Bureau of Medicine and Surgery.

The operations of this Bureau during that part of the fiscal year from June 30, 1901, to January 25, 1902, were conducted by my predecessor, Surg. Gen. W. K. Van Reypen, U. S. Navy, who retired from active service in the Navy on the latter date. From January 25 to February 10 the affairs of the Bureau were under the direction of Surg. J. D. Gatewood, U. S. Navy, acting chief of Bureau. My administration, therefore, covers that part of the year from February 10, the date of my taking the oath of office as chief of the Bureau of Medicine and Surgery, to the end of the fiscal year.

NAVAL HOSPITAL FUND.

The condition of this fund is as follows:

Balance on hand July 1, 1901	$180,797.16
Transferred to the credit since July 1, 1901	208,901.00
Credit by appropriation for fiscal year 1901	40,000.00
Total	429,698.16
Expended since July 1, 1901	205,818.10
Balance on hand June 30, 1902	223,880.06

INCREASED ESTIMATES.

Immediately upon assuming charge of the conduct of the business of the Bureau, I was confronted by the fact that insufficient estimates for the year ending June 30, 1903, had been submitted to Congress. The enlarged expenses incident to the increase of the personnel of the Navy, and to the establishment of new naval stations outside the continental limits of the United States, had caused a deficiency of $40,000 for the fiscal year 1902, but the estimate for 1903 had not been increased in keeping with this growing demand on the Bureau, as evidenced by this large deficiency—a deficiency of more than one-third of the original estimate for 1902. It became necessary therefore to recommend at once that Congress be asked to increase the appropriations for the Bureau for 1903 over those for 1902 to the extent of this deficiency, and an estimate was submitted raising the amount from $95,000 to $125,000 under the head of "Medical department," and from $20,000 to $30,000 under that of "Repairs, medicine, and surgery." Congress, recognizing the necessity for this increase, granted it.

URGENT NEED OF AN INCREASE IN THE NUMBER OF MEDICAL OFFICERS.

Attention is urgently invited to the almost imperative demand for an increase in the Medical Corps of the Navy, brought into existence by the growth of the service in personnel and material in the past few years. The following table graphically shows the disproportion between the increase in the work that medical officers are called upon to perform and the number provided to accomplish it:

Relative increase of Medical Corps and of medical and surgical work in the Navy and Marine Corps between the years 1897 and 1901.

	Per cent.
Increase in the Medical Corps	15
Increase in actual strength of Navy and Marine Corps	70
Increase in number of admissions to sick list	75
Increase in total number of sick days	95
Increase in number of patients treated in naval hospitals	137
Increase in number of medical surveys held	174
Increase in number of persons examined for enlistment	103

Statistics showing recent general increase in medical and surgical work in the Navy and Marine Corps.

	1897.	1899.	1900.	1901.
Average strength of Navy and Marine Corps[a]	15,734	20,819	23,756	26,973
Number of admissions to sick list	11,395	15,719	18,936	20,013
Total number of sick days	165,741	235,725	291,934	323,931
Number of patients in naval hospitals	2,099	3,377	4,428	4,986
Number of medical surveys	695	1,128	1,741	1,906
Number of persons examined for enlistment	11,633	17,424	25,081	23,678

[a] Total number authorized at present time is 37,170; actual strength July 1, 1902, is 30,356.

That the duties falling to the lot of the officers of the Medical Corps have been performed without failure is a circumstance worthy of commendation, but a continuance of this condition can scarcely be promised with the need of greater numbers growing more urgent as is indicated by the plan of increase of the Navy as a whole. Hospitals with twice as many patients as in 1897 now have fewer surgeons to care for them; cruisers and other vessels at sea have had their quota of medical officers cut down one-third or one-half; important shore stations where skilled

physicians should be stationed must depend upon the partial training of a pharmacist. Recruiting work in many places is performed by civilians without special knowledge of naval requirements, resulting in loss to the Government from the selection of physically undesirable men.

Congress, by wise legislation in raising the age limit for entrance, and increasing the rank of assistant surgeons, has made it possible to fill the corps, and there are no vacancies. The hope entertained by the young medical officer just entering the service for future distinction has been so little realized, however, that the resignations for the year 1901 numbered five, nearly one-fourth of the number taken into the service in the same period. The reasons leading up to these resignations could be traced to dissatisfaction with the opportunities for purely professional work and advancement offered by a service overworked and undermanned. Lately two promising candidates before the board of examiners, after passing exceptionally brilliant examinations, refused commissions in the Navy, but accepted those offered by another branch of the Government service.

Attention is also earnestly invited to the great injustice that will be inflicted in the near future upon the young officers holding commissions as assistant surgeons. The law establishing the grades of the Medical Corps provides that assistant surgeons shall be promoted to the next higher grade after three years' service, upon demonstrating their physical, mental, moral, and professional fitness therefor. This provision of law is laid before all applicants for admission to the Medical Corps as an inducement to enter the naval service, and is in reality an agreement made with them as to their future advancement. For the next two years, under the present conditions, the service will be obliged to repudiate this agreement to the extent that many of the candidates can not be given their examinations within the time specified by law.

From the present up to the end of 1904, 45 assistant surgeons, now at sea, will be eligible for the promotion promised them upon entering the Navy. To relieve those 45 officers there will be but 10 available, and, as the corps is filled, this number can not be augmented unless higher officers retire. In the period mentioned, only 4 retirements for age will take place, giving a possible 14 to relieve 45.

The higher grades can not be called upon to lessen the pressure on the lower. In the next year 19 surgeons and passed assistant surgeons, now at sea, will be entitled to shore duty, having finished a period of three years on shipboard, or its equivalent on stations outside the continental limits of the United States. To relieve these there are only 11 available officers, and none of these will have had the three years' shore duty deemed necessary to regain the ground lost while out of touch with the advancement made in their profession.

It is conservatively estimated, after a careful study of the present conditions and the plans for the increase of the Navy already authorized, that 150 more medical officers would be necessary to provide the service with an adequate number of medical officers to efficiently perform the duties required in the near future. In view of this fact, it is urgently recommended that Congress be asked to provide a substantial increase during the coming session, and it is suggested that legislation providing an addition to the present force of at least 75—one-half of the above number—be requested. This number should be in the lower or sea-going grades, and it is further recommended that 25 be made surgeons, making the total number 80 instead of 55 now author-

ized by law, and the remainder passed assistant surgeons and assistant surgeons, making a total in these grades of 160 instead of 110.

TRAINING OF JUNIOR MEDICAL OFFICERS, NAVAL MEDICAL SCHOOL.

A subject which also required early attention, and perhaps the most important one, was that of the education of the newly appointed medical officers on the duties peculiar to naval and military life. Circumstances brought about by the war with Spain and by the weakness of a force of officers wholly inadequate in numbers for the duties demanded of them had caused the closing of the department of instruction at the Naval Laboratory, New York. Since that time, the young medical officers just entering upon their naval career, with no knowledge of the requirements of the service, have been placed immediately on active duty, many of them in charge of their department on board ship and on foreign stations. Numerous and discouraging mistakes, with a loss of efficiency, have been the result.

It would seem only just, both to the service and to the officer, that he should be started aright. Experience of the examining boards of both the Army and the Navy has shown conclusively that the educational advantages offered by most of the medical colleges of the country in their prescribed courses are not sufficient to fit their graduates for the specialized work expected by our Government services, a knowledge of which is made more and more necessary by every accession of outlying and isolated territory. The Army and the Navy medical officer must be a specialist in many branches of his profession. Unlike his classmate who has entered into the practice of his profession in civil life, he, on shipboard, or at small stations or posts remote from civilization, has no specialist consultant or laboratory expert at his elbow to help him with his difficult or perplexing cases, or to give him the encouragement of established reputation in solving the larger problems which apply to the health and welfare of communities in his charge. He must be his own consultant and laboratory expert, as he must also bear alone the responsibility of danger to the community dependent upon him for sanitary safety. It is only fair, also, that he should be grounded in the customs and traditions of naval life, customs of which civilians beginning a naval career are profoundly ignorant. His efficiency as a naval officer is enhanced by his observance of these traditions. It is evident, therefore, that a postgraduate course for the novitiate in the Medical Corps of the Navy is a simple necessity. As such a course, outlining the requirements of the naval service, can not be obtained before his entrance into that service, it should be provided for him by the Government after he has received his commission.

The Army and the Public Health and Marine Hospital Service both give to their young officers special instruction in the branches of medical science of importance in their own lines of work. The Navy has even greater need of special instruction than her sister services. Many new problems in the etiology of diseases peculiar to our new possessions are yet to be solved. Some have already been worked out and some are on the road to solution by our medical confrères of the Army. It has been said that many of the important discoveries made by the Army Medical Corps in the last few years are the direct result of the knowledge gained by the investigators in the laboratory courses in the Army Medical School.

In order to again establish a school of instruction for the newly

commissioned medical officer and to take up the work of the department of instruction, brought to a close by the war with Spain in the spring of 1898, a plan to move the department of instruction from the Naval Laboratory, New York, to the Museum of Hygiene, Washington, D. C., was devised and put in operation. It was thought advisable to change the name to that of Medical School, as being a title carrying a stronger suggestion of the character of the institution. At the same time, and as part of the plan of organization, the Naval Medical Examining Board was moved to Washington from New York.

There were several reasons bearing on these changes which seemed to make them advisable. By removing the school from New York to Washington it could take advantage of the excellent accommodations offered by the Museum of Hygiene for a school building, and a faculty could be obtained from the members of the different boards on duty in Washington, all officers of experience and reputation, making a new detail of officers for this special duty unnecessary. Skilled instructors could also be obtained in Washington (for special courses bearing upon the work of the naval medical officer) from other branches of the Government service situated in Washington.

By the change of location of the medical examining board not only was much needed space obtained for the operations of the naval laboratory in New York, but also, and fully as important, the members of the board became available as instructors at the medical school. One great obstacle in the way of undertaking the work of instruction of the young officer was the paucity of numbers of medical officers of lower grades to meet the increasing demands of the rapidly growing naval establishment. New ships, new stations, enlarged hospitals, increased recruiting work, all must be supplied with medical officers, and this with no increase in the numbers of the corps. By a system of concentration of the board work in Washington, and by requiring one officer to fill several positions, it is expected that the important work of education may yet be accomplished, though, perhaps, not in as thorough and finished a manner as if the whole energy of the instructor could be focused on the educational idea alone.

Under the Department's order of May 27, 1902, the combined Naval Museum of Hygiene and Medical School was established, and from this impetus a new institution of instruction has been launched. A scheme of instruction has been formulated and plans for converting the building into one adapted to educational purposes have been completed, and it is intended that a class shall be assembled for work in October, 1902. This has been made possible by much earnest thought and labor, and to carry it to a successful issue means greater and more determined effort on the part of those officers upon whom the duty of administration and instruction will fall during the first year of the school's existence.

EDUCATIONAL OPPORTUNITIES FOR MEDICAL OFFICERS AFTER SEA SERVICE.

It is to be regretted that it has not been possible in late years for the Department to furnish opportunities to medical officers to increase their knowledge of their profession by post-graduate hospital and laboratory study, and to widen their experience beyond that which their routine duties afford, and there has been no scientific era, perhaps, in which such opportunities were needed more than that of the present. A decade or so ago it was the custom to grant leave of absence

for six months or a year after a cruise to ambitious officers for the purpose of study at some large medical center. There were always members of the Medical Corps eager to take advantage of this custom, even at their own expense, that they might increase their usefulness to humanity and to the service.

The circumstances mentioned above, of a force numerically weak for the duties to be performed, have made it necessary to withdraw even this privilege. The medical officer of to-day finds himself, after a three-year cruise, in which his professional field of operation has been restricted to practice among the small numbers of the crew of the vessel to which he has been attached, and where he has been separated from the stimulation of criticism and competition of his fellows, ordered immediately to duties which require all his time and which, perhaps, are again in a restricted professional field, or are even those requiring little or no professional application, such as administrative work or recruiting duty. He has been rusting at sea, and the rusting process has been continued on shore. The Bureau is strongly of the opinion that it would add much to the value of the medical officer could he be given a period of duty either at home or abroad in some one of the medical centers, where he would have opportunities to get in step with the march of progress which has gone on in the work of his profession while he has been at sea. He should have a chance, also, to perfect himself in some specialty, or take up some line of research; and not only should he be given such opportunities, but he should be required to take advantage of them and report on the work accomplished. It is expected that, with the development of the naval medical school and an increase in the number of the corps, it will be found feasible to give opportunities of this character to a limited number of officers returning from sea service, that they may recover the ground lost while out of touch with the growth and advancement of the medical profession.

UNITED STATES NAVAL HOSPITAL CORPS.

By act of Congress approved June 17, 1898, a Hospital Corps was created for the Navy. The details of organization of this corps have been satisfactory, and a body of young men have been assembled who, as far as conditions have permitted, have proven the wisdom of the law. But little advance has been made, however, in the systematic training of the members of the corps, and practically nothing has been attempted in this line. The recruits for the Hospital Corps are either drafted aboard cruising ships, without instruction, immediately after enlistment, where they prove themselves no better than the old-time sick-bay nurse, or, if more fortunate, are attached to a naval hospital for a longer or shorter period of time before going to sea. In the latter instance a certain amount of hospital training is given them, but no two hospitals follow the same system, and in this training drill in handling sick and wounded in service afloat and ashore has no place. The results obtained by our own Army and by the militia organizations of many of the States, and also by the military bodies of many foreign governments in the training of the hospital corps, have been eminently satisfactory. The Army of the United States has adopted an organized school system in which the recruit is taken in hand immediately after enlistment and is carried through a graded course of instruction in all matters pertaining to Hospital Corps work. In the Army and Navy this work means much more than nursing. All the conditions of

handling disabled and wounded in war are to be met in such a course of instruction, together with the study of remedies, the cooking of food for the sick, the preparation of returns and reports, the meaning of discipline and military organization, and last, but not least, the hospital care of the sick.

In order to establish a systematic scheme of training that will be uniform throughout the service, the Bureau has had prepared a plan of education and drill, based upon that in successful operation at the Army Training School, and modified to meet the requirements of both sea and shore work, which is now in effect at the naval hospital, Norfolk, Va., where some forty members of the Hospital Corps are under training. A Hospital Corps Drill Manual has also been compiled under direction of the Bureau, and has been approved by the Department. This book will be used in preparing the members of the Hospital Corps for the military demands of their duties and in teaching them the method of handling wounded and disabled in the field and on shipboard. The development of this training school will be watched and guarded with most careful attention by the Bureau. It is also essential that the drill and training of the Hospital Corps should continue during the service of its members after leaving the school of instruction, on shipboard and on shore stations. Medical officers should be required to carry on the plan of instruction in drill and study periods prescribed by their commanding officers, and these should be considered as much a part of the routine of the ship or station as drills of any other character for other divisions of its complement. The Bureau has under consideration plans to secure a uniform system of training adjusted to the conditions of the different duties afloat and ashore, and it is expected that the adoption of this, following the preliminary education received at the training school, will secure for the Navy a trained Hospital Corps of which the service may be proud.

SICK QUARTERS ON SHIPBOARD.

The space allotted for hospital purposes on our modern vessels of war and its location therein has not been in keeping with the great advances made in the construction and selection of the other living spaces. Much has been done in the way of perfecting the sanitary condition of the ships and of adding to the comfort and health of the ship's company, but the improvements for the care of the sick and wounded have hardly been in the same proportion. While it is borne in mind that all other considerations must be held secondary to the fighting efficiency of the ships, the care of the most important element of the combative body, the personnel, demands a prominent place, and in this the moral effect plays more than a secondary part to the physical. It is believed from study and comparison that much remains to be done toward effecting an improvement in ships' hospitals, and especially in their location, and that this can best be brought about by giving this Bureau an opportunity to act in an advisory capacity at the time the plans of new vessels are laid down. It would seem as if those who are to use the tools would be the ones best qualified to advise in their making.

A comparison of the hospital facilities of the Russian ship *Retrizan* with those of the *Maine*, built side by side in the shipyard of Cramp & Sons, in Philadelphia, gave a result much to the advantage of the foreigner. Modern shore hospitals were studied and experts in hospital construction consulted in the adaptation of hospital require-

ments to ships' restrictions in the building of the sick quarters of this vessel.

In an indorsement dated April 17, 1902, on a request of this Bureau for an opportunity to advise in matters pertaining to the care of the sick and the maintenance of health in the preparation of plans of new ships and in extensive alterations of old, the Department directed that the Bureau of Medicine and Surgery be called in consultation in all such matters in an advisory capacity. The Bureau of Construction and Repair has been most courteous in affording this Bureau the opportunities deemed essential, and many satisfactory advances have already been planned in these particulars in vessels under construction. A most important problem is the care of the sick of vessels carrying large crews—that of the segregation of those afflicted with contagious diseases—has been worked out under this order, and an isolation ward has been provided for on the new battle ships and large cruisers. The installation of modern operating rooms on these classes of vessels has been another improvement of note in the hospital facilities made possible by the Department's action in this matter.

That the desire of the Bureau to be consulted on this subject of the planning of quarters for the sick is not recent is shown in the report of the Surgeon-General of the Navy for the year ending June 30, 1894, in which it is suggested that the Bureau of Medicine and Surgery be consulted before space for sick quarters be assigned to vessels under construction.

AMBULANCE AND HOSPITAL SHIPS.

As early as 1895 the subject of the care of the wounded afloat, by means of ambulance and hospital ships, began to take a prominent place in the thoughts of medical officers of the Navy. Surgeon-General Tryon, in his report to the Secretary of the Navy in 1895, first called attention to the value, importance, and range of action of this method of handling the wounded of a naval engagement. Rear-Admiral W. K. Van Reypen, in the Surgeon-General's report for 1897, has an article on "The handling of the sick and wounded in action," in which he emphasizes the need of an ambulance or hospital ship.

The work of the *Solace* and the *Bay State*, of the Navy, and the *Relief*, *Missouri*, and hospital transports, of the Army, is of too recent date to need more than mention. Their value can not be questioned for a moment, and from such experience it would seem that the point had been reached in the growth of our naval establishment where a permanent hospital ship was a necessary adjunct to a fleet or station (and by hospital ship is meant one that is equipped for hospital purposes only and has the right to fly the flag of the Geneva Conference). In time of peace this vessel of mercy would act with the large squadrons during the more serious evolutions, both as a hospital and a recreation asylum for debilitated members of the ships' companies, and during times of less activity could serve the purpose of an ambulance ship to carry the disabled from the near and foreign fleets, and from the island stations, to the naval hospitals. Two vessels of this type, of moderate size, one for the Atlantic and one for the Pacific, could do great and humane work in time of peace, and with the advent of war would be ready for instant service with the first fleet prepared for action.

The late efforts to secure a hospital ship for the winter maneuvers in the West Indies show conclusively how difficult it is to secure action

until the time of need arrives, and how easy it is then to take everything for other purposes and leave the medical officer to combat the emergencies as they arise with what may be at hand. This is discouraging to the medical officer, but it is more than discouraging to the sick and wounded.

NEW FIELD EQUIPMENT.

The experience gained in the operations of the Navy and the Marine Corps in China and the Philippines has made prominent the need of a more extensive expeditionary equipment for the medical department than has been heretofore supplied.

Prior to 1898 the shore operations of the service had not been on a scale requiring much more than what might be termed an emergency outfit. The large increase in the Marine Corps and the call for its services in the East has placed several battalions in the field in active service, and it has been found necessary to largely increase the medical and surgical supplies of these detachments. The Bureau is perfecting a uniform outfit for field work, to be issued as an allowance to fleets, to be carried on flagships, and to marine battalions in the field, which it plans to have ready for issue in a short time. The need of assembling a sufficient allowance in the small compass demanded by the restricted stowage space of ships, and by uncertain means of transportation on shore, makes this a somewhat difficult problem. Several experienced medical officers, under the direction of the Bureau, have been making a study of the needs arising from this enlarged field of operation of the naval force, and as a result of their work it will soon be possible to furnish more adequate supplies for expeditions on shore.

BUREAU REPRESENTATION ON THE GENERAL BOARD, BOARDS OF CONSTRUCTION, AND INSPECTION BOARDS.

The attention of the Bureau has been attracted, in the routine performance of its duties through the year, to the desirability of having a representative of the Medical Corps on the boards dealing with the problems of construction, inspection, and general policy of the Navy. Many and important questions affecting the health and well-being of the most essential element of the combative organization, the personnel, are considered by these boards, and it would seem to be for the best interests of the Government and the service that the advice of men trained in the care of the physical condition of this element, and provided by law and regulations for that purpose, should be utilized, at least in an advisory capacity. It is the opinion of this Bureau that it would be to the advantage of the service to have all questions involving the sanitation of a vessel considered, and, as far as possible, worked out in the preparation of the plans of that structure. Ventilation, drainage, housing, and berthing of the crew, storage of food and water, location and character of sick quarters, heating and lighting, are subjects upon which the medical officer, by education, training, and experience, is fitted to give advice. As a general rule, to-day, he does not meet these problems until he is ordered for duty on the ship, completed and ready for commission, and one of his first acts of duty is to make a report dealing with defects in all these particulars, defects which not infrequently involve great expense to remedy, and sometimes are impossible of change. It would seem wiser to begin at the beginning.

In the inspection of ships and stations there are many questions

wholly within the province of the sanitarian to investigate and report upon, and which it would be of importance to the well-being of the personnel to have answered.

The General Board might avail itself with advantage of the advice of officers educated in sanitary science afloat and ashore in the consideration of the broad questions of harbors for bases and refuge, naval and coaling stations, and of camp sites, of climatic influences for good or evil, and of the prevention or control of possible or threatened epidemics of disease. The choice and physical development of the raw material of the personnel, consideration of the human factor in the selection of the different types of vessels of war and of other war material, the adaptability of clothing and food to the demands of unusual conditions, and of changed conditions brought into existence by the evolution of the materiel, are among many subjects upon which the medical officer is fitted to advise. It is difficult to see wherein anything but good could come from the cooperation of this Bureau in the work of all boards of the character of those under consideration.

REGULATIONS FOR THE APPOINTMENT OF PHARMACISTS.

It has been the custom in the selection of hospital stewards to fill vacancies in the grade of pharmacist, as provided by act of Congress, dated June 17, 1898, to make the professional examination largely one of record, based upon length of service and the recommendations of medical officers with whom the candidate has served. This was not considered for the best interests of the Hospital Corps, or of the service, and the Department, under General Order No. 88, of April 28, 1902, changed the existing rule and ordered that hereafter hospital stewards selected for promotion shall be required to pass a satisfactory examination before a board to determine their mental, moral, physical, and professional fitness for appointment as pharmacist.

This not only will have a tendency to stimulate the hospital steward to increase his professional knowledge and so raise the standard of pharmacists, but will place him, when promoted, on the same footing as other warrant officers, who are required to show their fitness for appointment to the warrant grade by passing a similar set of examinations. It is expected that good results will come of this change of regulation.

This very important grade of the Hospital Corps could with wisdom be largely increased in numbers. There are now not nearly enough pharmacists to fill the positions which, from their importance, call for men of the years and experience which members of the Hospital Corps must attain to qualify for the warrant grade. It is recommended that legislation be asked to provide for an increase of 25 additional pharmacists, this number being needed to supply hospitals, large stations, and flagships.

WOMEN NURSES FOR NAVAL HOSPITALS.

There has been a growing conviction in the minds of many of the most experienced medical officers of the service, especially since the war with Spain, that the employment of women for the nursing of the sick of our large hospitals would result in greater efficiency than has been obtained heretofore by the use of male nurses alone, and that such employment would not conflict with the conditions arising from the military character of the institutions.

This question has been given careful consideration by the Bureau

and by individual medical officers. That women are the superior of men for the work of nursing there can be no question, and the objection that they are not compatible with military conditions can scarcely apply to institutions of the character of our large naval hospitals. Civil hospitals in every country employ women to do the nursing, and for no other reason than that they fill the position of nurse better than men. Naval hospitals do not differ materially from civil institutions for the care of the sick, either in construction or routine, and it is believed that just as good results can be obtained from the use of women nurses in naval hospitals as in civil, and if war should come the Bureau would be much relieved by having women trained nurses in its larger hospitals. This would liberate most of the hospital apprentices for sea service. It can be stated with assurance that if the patients were given their choice of a nurse they would select women in the large majority of cases.

It is recommended, therefore, that Congress be asked to provide at its coming session for the establishment of a woman nurse corps for the Navy, to consist at first of 1 superintendent nurse, 8 head nurses, 16 nurses of the first class, and 24 of the second class, these numbers to be increased at the discretion of the Secretary as the needs of the service indicate.

Medical Inspector J. C. Boyd, United States Navy, has submitted a plan of organization for a woman nurse corps for the Navy. This paper is published in the section of this report reserved for special reports of medical officers.

SANATORIUM FOR THE NAVY FOR THE TREATMENT OF TUBERCULOSIS.

The success of the sanatorium treatment of tuberculosis in this country and in Europe has suggested that much more ought to be done for the succor of those of the naval service afflicted with this dread disease than has been accomplished in the past. Heretofore it has been necessary to either discharge from the service the consumptives of the Navy if they were not in the stage of the disease rendering them wholly helpless or, if suffering from a severe type or in the advanced stages of the malady, to allow them to linger out their last days at some naval hospital without the proper atmospheric environment to offer them a hope for life.

The experiment of the Army Medical Department in establishing a sanatorium for the treatment of tuberculosis at Fort Bayard, N. Mex., an abandoned army post in a locality of high altitude and favorable atmospheric surroundings, has been eminently successful, and the medical officers in charge of the institution have been able to submit most favorable reports.

The Bureau has this subject under consideration and hopes soon to furnish the Department with a plan for the care and treatment of these unfortunates.

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CONCLUSION.

In conclusion, the Bureau invites attention to the statistical report for the year. From this compilation it may be seen that the health of the Navy and Marine Corps has been good throughout this period, the percentage of sick and the death rate being lower than for several years.

The Bureau desires, also, to express, as a concluding remark, its commendation of the work of the Medical Corps during the year, and its appreciation of the difficulties under which the work has been performed. Since the end of the war with Spain the demands upon the medical officers have been steadily increasing until now the small number of the corps makes it no longer equal to the work required without a loss of efficiency. It is earnestly recommended that relief from this condition be asked of Congress at as early a date as possible.

Very respectfully,

P. M. RIXEY,
Surgeon-General, U. S. Navy.

The SECRETARY OF THE NAVY.

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REPORT OF THE COMMANDANT OF THE UNITED STATES MARINE CORPS.

HEADQUARTERS U. S. MARINE CORPS,
Washington, D. C., September 25, 1902.

SIR: I have the honor to submit the following report of the condition and services of the United States Marine Corps for the past year:

Since the date of my last report I have made a personal inspection of the marine barracks at the navy-yards, Portsmouth, N. H., Boston, Mass., Brooklyn, N. Y., League Island, Pa., Pensacola, Fla., the naval station, Port Royal, S. C., and the manufacturing depot and assistant quartermaster's office, Philadelphia, Pa. Although I have not made a regular inspection of the marine barracks, United States Naval Academy, Annapolis, Md., I have visited the station two or three times during the year in connection with the construction of the new barracks.

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THE PHILIPPINES.

At the time my last annual report was submitted to the Department Lieut. Col. M. C. Goodrell, U. S. M. C., was in command of the First Brigade of Marines, naval station, Cavite, P. I., the command of the brigade having devolved upon him by reason of the return to this country of Col. H. C. Cochrane, U. S. M. C., the former commanding officer, as mentioned in my report of last year.

Col. James Forney, U. S. M. C., was detached from the marine barracks, navy-yard, League Island, Pa., December 17, 1901, and ordered to command the marine brigade at Cavite. He assumed command of the brigade January 27, 1902.

In accordance with the policy of the major-general commandant to have all officers and men on duty in the Philippines returned to this country as soon as they have completed two and one-half years' service there, 23 officers and 500 enlisted men have been sent to the Philippines since the beginning of the calendar year 1902, and 17 officers and 620 enlisted men have returned to this country from the islands. These transfers have resulted in bringing home all officers and men who have served over two and one-half years in the islands, and the sending of other officers and men to take their places, and it is hoped that in the future the term of service in the Philippines may be lim-

ited to two years, it being the consensus of opinion among those who are best informed in the matter that this is as long as it is advisable to keep officers and men in the Philippine climate.

The first of the detachments sent to the Philippines this year sailed from San Francisco January 16 in the army transport *Kilpatrick*, and consisted of 7 officers and 100 enlisted men.

The second detachment sailed from San Francisco March 15 in the army transport *Hancock*, and consisted of 5 marine officers, 1 naval surgeon, and 150 enlisted men.

The third detachment sailed from San Francisco April 1 in the army transport *Sheridan*, and consisted of 6 marine officers, 1 naval surgeon, and 150 enlisted men. The *Sheridan* stopped at Guam en route and Maj. P. St. C. Murphy, U. S. M. C., ordered to command the marines at Guam, and 25 enlisted men were left at that station.

The fourth and last detachment sailed from San Francisco April 16 in the army transport *Sherman*, and consisted of 5 marine officers, 1 naval surgeon, and 100 enlisted men.

Each of the detachments has been sent from the Atlantic coast to San Francisco in a special train of the Chesapeake and Ohio Railroad Company, and all the trains have been run through on time without an accident or mishap of any kind. Each of the special trains mentioned was provided with a Pullman car for the officers, and tourist cars for the men. A dining car was attached to each train and the men were provided with three good meals a day on the trips.

The detachments returning to this country from the Philippines during the year have been as follows:

Two officers and 70 enlisted men sailed from Manila April 15 in the gunboat *Manila* and arrived at Mare Island June 16.

Seven officers and 300 enlisted men sailed from Manila May 14 in the army transport *Warren* and arrived at San Francisco June 12.

Three officers and 153 enlisted men sailed from Manila May 21 in the army transport *Kilpatrick* and arrived at San Francisco June 19.

Twenty-eight enlisted men sailed from Manila July 6 in the army transport *Thomas* and arrived at San Francisco August 1.

The U. S. S. *Solace* arrived at Mare Island from Cavite on September 21 with 5 officers and 97 enlisted men.

Owing to the scarcity of men at the marine barracks, navy-yard, Mare Island, Cal., the detachments arriving on the *Manila* and *Solace* have been retained at that post for the present, but it is my intention to bring them east as soon as I can enlist men on the Pacific coast to take their places at Mare Island.

All the other detachments as above mentioned were, immediately upon their arrival at San Francisco, sent east in special trains and distributed among the eastern stations of the corps.

I saw these various detachments as they passed through Washington. The health of the men was excellent and they were in good condition in every way.

It was my intention to start an additional large detachment of men to the Philippines before this time to relieve officers and men now there who have completed two years' service in the islands, but the troubles on the isthmus of Panama have necessitated the organization of two battalions of marines, one of which has been sent to the Isthmus, the other being now held in readiness for duty there if required, and this will make it impossible to send any more detachments to the Phil-

ippines until the officers and men comprising the battalions mentioned become available.

The marines now in the Philippines are distributed among the following-named posts: Cavite, Paranaque, Rosario, Novaleta, Balabac light, Las Pinas, Morong, Bacoor, Cavite Viejo, Pollok, Subig, Olongapo, Isabela, Malabrigo light, San Bernardino light.

A report received from Col. James Forney, U. S. M. C., commanding the First Brigade of Marines, dated July 18, 1902, shows that the general health of the officers and enlisted men in the islands is excellent, and that, generally speaking, the barracks and quarters are in as good condition as could be expected, considering the fact that most of them were not constructed for the purpose for which they are being used and are more or less ill adapted for such purpose. All of the buildings have been vastly improved since the American occupation of the islands. A copy of Colonel Forney's report is appended to my report, marked "B."

The fact that there has been practically no active field work in the island of Luzon during the year has permitted more attention to be given to the drilling of the men, and drills have been held regularly on five days of the week at the different stations, with beneficial results.

Colonel Forney reports that on March 26, 1902, he instituted a tournament for the three best rifle shots in the brigade. Prizes were offered and teams competed from San Felipe, Cavite, Bacoor, and Olongapo. The match took place at the navy-yard range at Canacao, the prizes being won by the team from Olongapo.

On March 25 the senior squadron commander, United States naval force, Asiatic Station, cabled the Navy Department that cholera had broken out at Manila and that quarantine regulations had been established. In pursuance of this officer's recommendations the President authorized an allotment of $500 from the emergency fund of the Navy Department for the erection of a disinfecting house in the navy-yard at Cavite; and this step, together with other prompt sanitary precautions, undoubtedly prevented a more serious epidemic. One officer of the Marine Corps, First Lieut. O. H. Rask, died of this disease on May 29. Lieutenant Rask was a most capable and promising young officer, and his death is a great loss to the corps. Thanks to the stringent measures which were promptly taken to prevent the spread of the disease, only four enlisted men of the Marine Corps have died of cholera during the year.

On January 7, 1902, I directed Col. F. L. Denny, quartermaster, United States Marine Corps, to proceed to the Philippine Islands to inspect the buildings and grounds, public property, etc., of the several stations of the Marine Corps in those islands.

The quartermaster's inspection of the various posts was greatly facilitated by the courtesy of Rear-Admiral Frederick Rodgers in allowing him to visit the different posts on the U. S. S. *Zafiro*, thus completing the inspection in the short period of fourteen days.

The quartermaster's report of this inspection dated July 1, 1902, which is appended to my report, marked "H," gives an interesting and detailed account of the condition and requirements of the different posts visited by him. On account of the uncertainty as to the permanency of a number of stations, no estimates have been submitted for certain improvements which will be absolutely necessary if the sta-

tions are to be maintained permanently. When more definite information can be obtained relative to the permanency of these stations specific recommendations will be made relative to repairs and improvements required.

While there have been practically no demonstrations during the year by organized insurgents, the marines have done good work toward ridding the islands of various roving bands of ladrones which still infest many localities there. The following paragraph describes a typical case of marauding by ladrones and prompt action on the part of marines:

On the evening of November 3, 1901, one of the native residents of Olongapo reported to Lieut. Col. O. C. Berryman, U. S. M. C., commanding the district of Subig and Olongapo, that he had been attacked by a party of five ladrones near Morong; that his wife had been abducted, and all the property of both stolen.

Lieutenant-Colonel Berryman detailed First Lieut. W. W. Low, U. S. M. C., who volunteered, to capture the party of ladrones, which was done by this officer, with a detail of a corporal and 10 men. The ladrones were found about 2½ miles inland from Mabayo, Bataan Province. The 5 men captured were all armed with bolos, and one of them proved to be an escaped prisoner from Olongapo. The prisoners were sent to Morong for transfer to the civil authorities.

Lieutenant-Colonel Berryman remarks in his report that this capture will make the trail to Morong more secure in future.

First Lieutenant Low commends the men composing the detail under his command for willingness and soldierly performance of duty in making the capture, they having pulled a cutter 24 miles and marched over a difficult trail at night to accomplish the purpose.

BATTALION OF MARINES IN SAMAR.

On October 20, 1901, a battalion, consisting of Maj. L. W. T. Waller, U. S. M. C., commanding; Capts. D. D. Porter, R. H. Dunlap, A. J. Matthews, and H. I. Bearss; First Lieuts. J. T. Bootes, J. H. A. Day, C. C. Carpenter, A. S. Williams, and H. R. Lay; Second Lieuts. J. P. V. Gridley, Frank Halford, and A. C. Rogers; Surg. G. A. Lung, and Asst. Surg. J. M. Brister, and 300 enlisted men, was detailed at Cavite for duty on the island of Samar.

The battalion was composed of Companies C, D, and H, First Regiment, and Company F, Second Regiment, First Brigade of Marines, and, equipped in heavy marching order, embarked on the U. S. flagship *New York* at Cavite October 22, 1901.

This battalion was detailed by Rear-Admiral Frederick Rodgers, U. S. Navy, senior squadron commander, Asiatic Station, to reenforce and cooperate with the army troops under command of Brig. Gen. J. H. Smith, U. S. Army; and while it was the intention that the marine battalion should be under the general command of Brigadier-General Smith, it was also contemplated that Major Waller's movements should be supported, as far as possible, by a vessel of the fleet, to which he should make reports from time to time, and through which supplies required by him were to be furnished.

The battalion arrived at Catbalogan, Samar, on the morning of October 24, and both it and the stores were transferred to the U. S. S. *Zafiro*, which vessel, preceded by the U. S. S. *Frolic*, carrying Rear-Admiral Rodgers and staff and Brigadier-General Smith and his aids,

proceeded to Tacloban, Leyte, and thence to Basey, where two companies and the battalion staff were disembarked, relieving the Ninth United States Infantry. The marines at this point were provided with one 3-inch gun and a Colt automatic 6-millimeter gun.

Major Waller then returned to the *Zafiro*, which, with the *Frolic* and *Vicksburg* went to Balangiga, on the south coast of Samar, where Capt. D. D. Porter was left in command with 159 men, relieving the Seventeenth United States Infantry, with instructions to begin operations as soon as possible. Major Waller then returned to Basey, and, after consultation with General Smith, published a general order relative to the lines on which the campaign was to be conducted, with the object of clearing Samar of the treacherous enemy, particular instructions being given to prevent rice and other food supplies getting into the interior for the use of the insurgents. Orders were also given for the destruction of all bancas and boats not registered.

The district to be covered by the marines embraced the entire southern portion of the island of Samar, and active operations were at once begun, both at Basey and Balangiga, small expeditions being sent out almost daily to clear the country of the insurgents, who were not generally found in formidable numbers, but appeared in small, roving bands, some of which, however, had provided themselves with more or less extensive defenses in the way of trenches, traps, pits, etc. Among the insurgents there appeared to be a great many bamboo guns, but very few rifles.

During the expeditions sent out from Basey and Balangiga, numerous villages were destroyed, a considerable number of natives captured, and a quantity of rice and other provisions seized. From time to time, as the operations were continued, the natives came into the various towns and took the oath of allegiance to the United States.

On November 5 Major Waller took a detachment to the Sohoton, and drove the insurgents from their trenches there. Two private marines were killed in this action; the number of natives killed could not be ascertained, as it took some time to reach the trenches.

A great many small expeditions were sent up the Cadacan River. Several of these parties were fired upon, but the skirmishes were slight, and no casualties were suffered by the marines. In an engagement on the 8th of November, at Iba, 9 natives were killed and 11, armed with bolos, were captured; a number of houses were also destroyed, and a quantity of hemp seized.

An expedition taken out by Captain Porter to scout in the neighborhood of Balangiga, killed 1 insurgent and captured 7. This party found many relics of the massacred men of the Ninth Infantry.

Another expedition was sent to the Sohoton, November 13 and 14, in which 12 insurgents were killed. Major Waller says that these expeditions into the Sohoton district were the most important of the whole campaign, so far as their effect upon the insurgents was concerned.

About the middle of November, three columns were dispatched into the Sohoton region to attack the fortified cliffs and caves in the mountains, which had been reported to be practically impregnable. Two of the columns, under command of Captains Porter and Bearss, respectively, marched on shore, and the third, commanded by Major Waller, went up the river in boats. The plan of the attack was that the two shore columns were to unite on November 16 at the enemy's stronghold, and be joined there by the third, or river column, under Major Waller,

with the object of making a combined attempt to force the enemy's position.

On the 17th of November, the shore column struck the enemy's trail, which was followed, and the detatchments soon came upon a number of bamboo guns. One of these commanding the trail had the fuse burning, and Acting Corporal Harry Glenn rushed forward and pulled out the fuse. The attack of the marines was a perfect surprise, and the enemy was completely routed, 30 being killed. After driving the insurgents from their position the troops crossed the river, scaled the cliffs on the opposite side, and destroyed the camps there. The enemy fired two volleys and then fled. Major Waller says that he himself was not in this attack, being in the river below and unable to reach the firing line in time, but he mentions Captains Porter and Bearss as being entitled to the highest credit for the courageous and skillful manner in which they routed the enemy in the face of apparently insurmountable obstacles. In order to reach the enemy's position, the troops had to climb the cliffs, which rise sheer from the river to the height of about 200 feet and are honeycombed with caves, to which access is had by means of bamboo ladders, and also by narrow ledges with bamboo hand rails. Tons of rocks were suspended in cages, held in position by vines, and in readiness to be precipitated upon people and boats below. Instant destruction would have undoubtedly been the fate of the boats had they undertaken the ascent of the river before the shore column had dislodged the insurgents. In Major Waller's report of the above-mentioned engagement, he says:

The men in this march overcame incredible difficulties and dangers. The positions they destroyed must have taken several years to prepare. Reports from old prisoners said they have been three years working on the defenses. No white troops have ever penetrated to these positions, and they were held as a final rallying point. The cliffs were of soft stone of volcanic origin, in the nature of pumice. It cut the men's shoes to pieces. Many of the men were barefooted, and all had bad feet. The march was heroic, and too much praise can not be given the men. We in the boats were not ten minutes away in point of distance, but unable to reach the flanking column at the point of attack. The troops captured and destroyed 40 bamboo guns, rice, food, and cuartels.

Further pursuit of the enemy at this time had to be abandoned because the rations of the marines had become exhausted. Concerning the officers and men who especially distinguished themselves in the above-described engagement, Major Waller says:

I wish to recommend especially Capts. D. D. Porter and H. I. Bearss for either a medal of honor or a brevet. These officers carried out their instructions in the face of hardships, dangers, and incredible obstacles. Not only was personal courage of a high order displayed, but intelligence, discrimination, and zeal. Each footstep in the advance up the cliffs carried its own dangers. These captains report to me, and I in turn cordially indorse their recommendations—First Lieuts. C. C. Carpenter and H. R. Lay, and Second Lieut. A. C. Rogers. Where all did so well it seems almost impossible to distinguish extraordinary service. Each man carried his life in his hands. Asst. Surg. J. J. Brister, U. S. Navy, is especially recommended by Captain Porter for his work and assistance. Gunnery Sergt. John H. Quick and Acting Corp. Harry Glenn, Company H, are especially recommended, the first for conspicuous conduct, Glenn for risking his life to pull out the fuse of a bamboo gun. Sergeant Quick now holds a medal of honor for Guantanamo. I do not believe there is anything too good for him. Private Campbell is mentioned for his conspicuous work with the Colt gun, under extreme difficulties.

Of Captain Bearss' detachment, the following men are especially recommended: Sergeant McCaffery, and Corporal J. J. Murphy, for scaling cliffs to the right, an extremely courageous and hazardous undertaking. Corp. Robert Lakaye, for swimming the river unarmed in the presence of the enemy, to secure bancas. First Sergeant Grogan, Company F, for great zeal in constantly encouraging men under the most adverse and trying circumstances.

Although the river column was unable to reach the point of attack, its presence made it possible for the shore column to do so and to surprise the enemy.

The effect of the capture of this last stronghold upon the insurrectos of Samar can not be overestimated, as they had spent years of labor upon the defenses, and undoubtedly considered the cliff fortifications impregnable.

Brigadier-General Smith, commanding the Sixth Separate Brigade, complimented the work done by Major Waller's battalion as follows:

The brilliant success of your command, both men and officers, has my highest congratulations. * * * There is nothing impossible for the American fighting man, and your work in the Sohoton Province is an additional proof of that fact.

Rear-Admiral Rodgers also complimented Major Waller's forces for their work, telegraphing as follows from the flagship *New York:*

Well done, marines. The senior squadron commander sends hearty congratulations to you, Captains Porter and Bearss, and your command. They are doing what I predicted for them, and are maintaining the reputation of the corps.

Major-General Chaffee, United States Army, telegraphed Major Waller from Manila, under date of December 1, 1901:

Have just read your message to General Smith, dated 19th. Thanks to officers and men. Assure each of my cordial regard and my highest appreciation of the manly heart and soldierly spirit which makes light of obstacles and is never daunted or satisfied while service can be rendered to our country. I hope kind Providence will guide the footsteps and take the part of American soldiers battling for peace in the wilderness of Samar.

The following cablegram was also repeated to Major Waller at Basey, Samar:

Rodgers, Cavite. Department congratulates Waller and command.

The important bearing and value of the work done by Major Waller's battalion in destroying the natives' stronghold in the Sohoton Mountains is indicated by the terms of appreciation used by those in authority who were thoroughly conversant with the conditions and difficulties under which success was achieved.

General Smith, in forwarding Major Waller's report of November 23, 1901, relative to the above-described operations, indorsed it as follows:

Maj. L. W. T. Waller, U. S. M. C., now brevet lieutenant-colonel, has proven himself to be an officer of exceptional merit, and carries out my instructions loyally and gallantly. He deserves another brevet for his services thus far, and I urge this recognition; also a general order from the division commander, congratulating him and the marine corps of this command.

General Smith also concurred in Major Waller's recommendations of Captains Porter and Bearss, First Lieutenants Carpenter and Lay, Second Lieutenant Rodgers, and Assistant Surgeon Brister, U. S. Navy, as well as those relating to Corporal Lakaye, Acting Corporal Glenn, First Sergeant Grogan, and Private Campbell.

Maj. Gen. Adna R. Chaffee, commanding the Division of the Philippines, in forwarding the same report, says:

The work of the marines stationed in southern Samar has been gratifying, and they have accomplished much good in the short time they have been there. I recommend such action be taken on this report as may be deemed appropriate and proper under the circumstances.

The Secretary of War, in forwarding the reports to the Secretary of the Navy, used the following language:

In transmitting these papers I avail myself of the opportunity to express the gratification of this Department for the excellent work of the marines stationed in southern Samar and to join with General Smith in his recommendation for suitable recognition of the services of Major Waller and his command.

After the detachments returned from the expedition into the Sohoton country, the plan of sending out small detachments to rid the country of insurgents wherever they were reported to be was successfully continued. During these expeditions a considerable number of insurgents were killed and quantities of supplies seized. The effect of this continual pressure upon the insurgents was shown by the number of people who presented themselves in the various towns to take the oath of allegiance to the United States.

In a communication dated December 5, 1901, Major Waller refers to General Smith's desire that the marines make the march from Basey across the island to Hernani, on the east coast, for the purpose of selecting a route for a wire to connect the east and west coasts. General Smith also asked Major Waller to run wires from Basey to Balangiga, and left to the major's discretion the point of departure from the east coast, either from Hernani or Lanang.

December 8 two columns were started from Basey for Balangiga, one under command of Major Waller, proceeding along the shore line, and the other under Captain Bearss, marching about 2 miles inland, stores being sent by the cutter which was kept abreast of the beach column. The details of this march are given in full in Major Waller's reports, all of which are appended to this report, marked "S."

Minor operations were conducted from Balangiga during December, and these are described in detail in the reports which are appended hereto. Expeditions were also sent out as far as Quinapundan, Omagongong, and Pambuham, and scoured the intervening country thoroughly, having numerous small skirmishes with the natives. At Omagongong the column was fired upon by the enemy from a nearby hill, and Sergeant-Major Bell was wounded in the shoulder. This fire was silenced and the trenches and earthworks of the insurgents were destroyed.

THE MARCH ACROSS SAMAR.

Major Waller's report of January 25, 1902, which will be found in the appendix to this report marked "S," contains the account of his march across the southern part of Samar, from Lanang to Basey, during which almost incredible hardships were endured by the officers and men, who lost their way in the mountains owing to the trails being obliterated by floods and freshets and were many days without food.

On arriving at Lanang, prior to starting on this march, Major Waller says he found that Lieutenant Williams, of the Seventh Infantry, had just come in from a twelve-day trip looking for the Sohoton trail and did not believe the trail existed. He and Captain Pickering, commanding the post, urged Major Waller not to make the attempt, but the major says in his report:

Remembering the general's (General Smith's) several talks on the subject and his evident desire to know the trail and run wires across, coupled with my own desire for some further knowledge of the people and the nature of this heretofore impenetrable country, I decided to make the trial with 50 men and the necessary carriers.

The detachment started from Lanang on the morning of December 28, 1901, the personnel being as follows: Maj. L. W. T. Waller, Capt. D. D. Porter, Capt. H. I. Bearss, First Lieut. A. S. Williams, U. S.

M. C.; Second Lieut. A. C. De W. Lyles, Twelfth Infantry, U. S. Army, aid sent by General Smith; Second Lieut. F. Halford, 50 enlisted men of the United States Marine Corps, 2 native scouts, and 33 native carriers.

The start was made in boats, but when Lagitao was reached it was found impossible to use them further on account of the numerous rapids, and they were accordingly sent back with the men of the Seventh Infantry, who had accompanied the detachment thus far, and the remainder of the distance was made on foot. One of the most trying features of the march was the necessity for crossing and recrossing the river many times, keeping the men's clothing wet continually, so that they became badly chafed. On the 30th of December it was necessary to issue reduced rations, and the next day the rations had to be cut down to one-half and the number of meals per day to two. The march was continued across the mountains over an almost impassable country on January 1 and 2. On the 3d it was reported to Major Waller that many of the men could not keep up, and after a conference with his officers he decided to take one officer (Lieutenant Halford, who was in charge of the advance that day) and 13 of the men who were in good shape and push forward as fast as possible to the destination, with the idea of sending a relief party back with provisions, clothing, etc., for the main column, which was to go slowly and follow Major Waller's trail, which would be clearly marked. Captain Porter was left in command of the main column. The advance column was afterwards joined by Captain Bearss and a corporal, the former carrying a message from Captain Porter. A message was sent back to Captain Porter, directing him to follow the advance column to a clearing which had been found where there was a quantity of sweet potatoes, bananas, and young cocoanut palms, and to rest there until his men were in condition to proceed. This message did not reach Captain Porter, however, as the native by whom it was sent returned two days later, stating that there were so many insurrectos about that he was afraid; but Captain Bearss said he was sure Captain Porter would follow, as he was considering it when he left.

On January 4 Major Waller's party discovered a clearing, rushed the first shack they came to, and captured 5 people, among whom were a man and a boy who stated that they knew the way to Basey. The other captives were released and these two placed under guard to act as guides. After crossing the Sohoton River, the celebrated Spanish trail leading from the Sohoton caves to the Suribao River was discovered and followed. After the Loog River was reached and crossed, the party proceeded through the valley to Banglay on the Cadacan River, and near this point Major Waller's party came upon the camp which Captain Dunlap had been directed to establish to await their arrival. The detachment was placed in Captain Dunlap's cutter, and the start made for Basey at once, where they arrived on the afternoon of January 6.

Concerning the condition of the men of his party, Major Waller says:

> The men, realizing that all was over and that they were safe and once more near home, gave up. Some quietly wept; others laughed hysterically. * * * Most of them had no shoes. Cut, torn, bruised, and dilapidated they had marched without murmur for twenty-nine days, and, having accomplished what no white troops had done before, they thought not of it but of each other. They spoke of me, my age, and to them well-known injury to my feet, and they wondered how I stood it.

Immediately after the arrival of the detachment at Basey a relief party was sent back to the point where the last clearing and the guides

had been found, and Major Waller himself followed the next day, and joined the first relief party, remaining out nine days searching for signs of Captain Porter without success. No trace of him or his party could be found where they they had last been seen. The floods were terrific and had been worse, several of the former camp sites being many feet under water. The men of the relief party began to break down, as they had been through many hardships and were a day without food, and the party had to return. Upon returning to Basey Major Waller was taken sick with fever.

The entire march across Samar was about 190 miles. Major Waller's march, including his return with the party searching for Captain Porter, was about 250 miles.

In Captain Porter's report, written from Camp Connell, Balangiga, Samar, under date of February 8, 1902, which is appended to my report marked "S," he states that he had failed to receive definite information as to what Major Waller's intentions were, and as the condition of his men was rapidly becoming serious, and the food supply was practically exhausted, he discussed the situation with Lieutenant Williams and finally concluded that the best thing to be done was to get to Lanang by their old trail. Captain Porter, considering himself to be stronger and in better physical condition than Lieutenant Williams, took Sergeant Quick, 6 privates and 6 natives and started for Lanang on the morning of January 3, ordering Lieutenant Williams to remain where he was, waiting a reasonable length of time for Major Waller's party and then to follow Captain Porter's trail. Captain Porter says that the sufferings and hardships endured by his men, caused by sore feet, the lack of food, and constant downpour of rain, were indescribable. The men's bodies were covered with sores caused by constant chafing by the wet clothing. The Lanang River rose 15 feet in one night, making it impossible to cross from side to side, as had been done previously. Upon reaching a point where the boats had been left before, four of seven men in the party had to be left behind, as their condition would not warrant their attempting to go farther. At this place there was a small potato patch, so that the men could subsist until aid reached them. Captain Porter expected to reach Lanang in four days, but the high waters and the weakened condition of the men prevented him from doing so until the evening of January 11, 1902.

Upon his arrival at Lanang, Captain Porter explained the situation to Captain Pickering, Company K, First Regiment U. S. Infantry, who immediately organized a relief expedition under Lieutenant Williams, Company K, which made every effort to start the following morning but the men were nearly washed out to sea, and were consequently forced to wait until the river went down, which was not until early on the morning of January 14. Owing to the swift current, it took Lieutenant Williams and his party three days to go the same distance that the marine detachment had covered in one day on the way up. Lieutenant Williams of the Infantry is entitled to great credit for his 25-mile fight against the current and up the rapids hauling his boat a part of the way by hand. On January 16 the relief party met the four men who had been left by Captain Porter and sent them to Lanang by canoe. The main body of the men under Lieut. A. S. Williams, U. S. M. C., were reached by the relief party on the morning of the 18th of January, and were safely landed at Lanang on the evening of that date. Both Lieutenant Williams, U. S. M. C., and the men were in a wretched condition, and broke down completely upon

their arrival. During the march which Lieutenant Williams had made 10 men had been left, from time to time, as they were absolutely unable to move farther from exhaustion, starvation, and exposure. Lieutenant Williams said there was positively no hope for these men.

The complete report of Lieutenant Williams is appended to my report marked "S," and in this report the slow and painful progress made by his men and the privations suffered by them are described. All of the party were in such a mental and physical condition that it is surprising that more of them were not lost. The condition of the detachment became so bad that a sergeant and nine of the men in the best condition were sent ahead to impress upon the rescuing party the desperate straits of the remaining men. This advance party reached the point where the final rescue was effected five days ahead of the remaining members, but the men were unable to proceed farther on account of the swollen condition of the river. Toward the latter part of the march the native carriers became most surly, refusing to obey orders when called upon and going outside of calling distance when the party went into camp at night. One of the native carriers attacked Lieutenant Williams with a bolo and succeeded in stabbing him a number of times, although, fortunately, the wounds were slight. This officer was also bitten on the hand by a native. While this attack took place other native carriers stood by and offered no assistance. Some of the men, notably Sergeant McCaffery, came to the assistance of Lieutenant Williams, although the sergeant was too weak to work the bolt of his rifle.

In his report Lieutenant Williams says:

> The discipline of the men is deserving of the highest praise. At a time when all were despairing and desperate, and rank meant little, none failed to render me prompt obedience and the unfaltering respect that marks the good soldier. Some despaired from the beginning, and were only kept in line by their more sanguine comrades. In this connection I must mention Privates Kittle, Slattery, and Davis, whose constant hopefulness and expressed determination were as great a help to me as to the others. Captain Porter's action in going ahead of me to Lanang in the comparatively short time of twelve days deserves the very highest praise, and to his courage and determination is due our rescue. Appreciation of the action of Second Lieut. K. P. Williams (U. S. Army) will surely result in his receiving the medal of honor for which he has been recommended, and which he so richly deserves.

Having learned that a detachment of one company of infantry sent to garrison Quinapundan had failed to reach that place, Major Waller offered to garrison it with men from Basey and Balangiga, and one company of 46 men and a surgeon under Captain Bearss from the former station, together with 25 men under Second Lieutenant Halford from the latter, proceeded to Quinapundan accordingly. Some resistance from the natives was encountered at two points on the way to Quinapundan, but their fire was soon silenced, and the camp was established at that place on January 19. After the camp was pitched the detachment was again fired upon by the natives with about 12 rifles, but Lieut. C. C. Carpenter, with 15 men, flanked the insurgents and put them to flight. On January 31 a party of 25 men, under command of Second Lieut. A. C. Rogers, made a balloon-shaped "hike" to the northeast, and near the junction of the Quinapundan, Salcedo, and Omagongong trails encountered a party of insurgents and killed five bolo men. The next day Lieutenant Rogers' party was fired upon by the enemy with about 25 rifles, but the insurgents were forced to retire with heavy loss. Sergeant McSwiney was killed early in this fight, and a native guide was wounded.

These minor operations were continued from time to time from Quinapundan and Balangiga.

Captain Dunlap, who was left in command at Basey during Major Waller's march across Samar and the operations preliminary thereto, submitted a report dated January 17, 1902, which is appended to my report, marked "S," and which contains an account of the operations of the troops under his command from December 8 to 27, 1901. Several small expeditions were sent out, capturing a number of insurgents, destroying shacks, and seizing provisions belonging to the insurgents. The result of these continued and persistent movements against the insurgents was shown by the fact that on December 15, 1901, 26 bolomen with bolos presented themselves at Basey, and on the 17th five bolomen, including a captain of the insurgents, presented themselves at the post, and they were all given the oath of allegiance to the United States.

Referring to the men of Captain Porter's column, Major Waller says in his report, that the native carriers were sent from Balangiga to Basey with such men of the column as were able to move, the natives being under the guard of Sergeant Quick, and it was on this journey that the natives attempted to murder the marines, for which Major Waller ordered the natives to be shot. It was for the issuing of this order that Major Waller was subsequently tried by general court-martial and, as has been reported to the Department, was acquitted.

In the reports made by Major Waller that officer states that while Capt. R. H. Dunlap did not have an opportunity to meet the enemy in numbers, he was a brave and intelligent officer in whom entire confidence could be reposed. He also says that Surg. G. A. Lung, U. S. Navy, rendered much assistance in scouting and plotting, and that his map of the Cadacan River is the best extant. Private James Magee, Company H, is highly commended for saving the life of Corporal Murphy, of Company D, at the risk of his own. Major Waller says that First Lieut. A. S. Williams, U. S. M. C., should be rewarded for his indomitable pluck on the march back to Lanang, and that Capt. A. J. Matthews and Lieutenant Halford at Balangiga were especially active and merit reward.

In a supplementary report made after his return to this country, Major Waller refers to certain other expeditions not mentioned in his main reports, among which were an expedition on November 23, 1901, to the vicinity of Nipa Nipa under command of Major Waller and Captain Porter, which was designed to intercept boats communicating with the insurgents in Samar from Leyte. Two boats were fired upon and overhauled and 3 of the insurgents were killed. Another expedition was taken by Lieutenant Gridley in the same direction on December 15. The boats of this expedition were swamped in a typhoon and driven ashore. Bolomen swarmed on the beach to kill the marines when they landed, but the latter, as soon as they gained a footing unslung their rifles, opened fire, and succeeded in driving the insurgents off. Lieutenant Gridley is complimented for his management of this expedition.

On January 4, 1902, an expedition was sent to Odoc under charge of Lieut. C. C. Carpenter, as insurgents were reported to be in force in that locality. Eight insurgents were killed and 4 captured by Lieutenant Carpenter's party. On the 25th of the same month a party sent out under Lieutenant Gridley toward Iba had a skirmish

with the insurgents and killed 8. In closing his supplementary report Major Waller mentions the names of the officers composing the personnel of his command, inviting attention to the different recommendations as follows:

First Lieut. A. S. Williams, twice recommended.
First Lieut. J. T. Bootes, quartermaster and commissary.
Surg. G. A. Lung, U. S. Navy, once recommended.
P. A. Surg. J. A. Brister, U. S. Navy, once recommended.
Capt. D. D. Porter, U. S. M. C., twice recommended.
Capt. R. H. Dunlap, U. S. M. C., once mentioned.
Capt. A. J. Matthews, U. S. M. C., once mentioned.
Capt. H. I. Bearss, U. S. M. C., twice recommended.
First Lieut. J. H. A. Day, U. S. M. C.
First Lieut. C. C. Carpenter, U. S. M. C., twice recommended.
First Lieut. H. R. Lay, U. S. M. C., twice recommended.
Second Lieut. A. C. Rogers, U. S. M. C., twice recommended.
Second Lieut. J. P. V. Gridley, U. S. M. C., twice recommended.
Second Lieut. Frank Halford, U. S. M. C., twice recommended.

Major Waller also asks that the attention of the Department be invited to the different mentions of naval officers, who so heartily and readily at all times cooperated with and assisted his command, and adds:

To Surgeon-Major Coombs and Lieutenant Yost, U. S. A. M. D., are due the thanks of our entire corps for their care of our sick officers and men. Of Capt. D. D. Porter I can not say too much. The same may be said of Capt. H. I. Bearss. Captain Matthews always showed great courage and judgment. Captain Dunlap, always ready, steady, and reliable, only lacked opportunity. Of the lieutenants coming immediately under my notice, Lieutenants Williams, Carpenter, Halford, and Gridley stand foremost. I was, however, dependent largely upon the reports of the captains concerning their subalterns.

The Samar battalion returned to Cavite March 2, 1902, after having been relieved in southern Samar by detachments from the Army. In the cablegram conveying this information to the Navy Department, dated March 16, 1902, the commander in chief, Asiatic station, said:

I desire to state here that the marine battalion commanded by Major Waller, which was sent to the southern end of Samar, then considered the worst place in the Philippines, and where nearly a whole company of the Ninth Infantry had just been massacred, was actively and continuously engaged against the insurrectos for over three months and performed its duty in a most efficient manner.

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ARMY COURTESIES.

As heretofore, the Marine Corps is under obligations to the army authorities for their courtesy in obliging the corps with transportation for its officers and enlisted men, and stores, on army transports, and in furnishing the corps with certain rations and other supplies on application.

All the regular appropriations and the several allotments made to the Marine Corps from the emergency fund of the Navy Department have been carefully and judiciously expended, all purchases being substantiated by vouchers.

It gives me pleasure to be able to state that the Marine Corps has met promptly and satisfactorily the many and varied demands made upon it during the year, and that it has maintained its reputation for constant readiness and high efficiency.

Very respectfully,

CHARLES HEYWOOD,
Major-General, Commandant.

The SECRETARY OF THE NAVY.

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REPORT

OF THE

SECRETARY OF THE INTERIOR.

DEPARTMENT OF THE INTERIOR,
Washington, D. C., November 19, 1902.

SIR: I have the honor to submit for your consideration the annual report of this Department, with the reports of the bureaus, offices, and institutions which are placed under its supervision. I have heretofore had occasion to advert to the great increase in the business of this Department, and to the measure of responsibility involved in its consideration and dispatch. The past year has been characterized by a further increase in the volume of business, notably so in the Patent Office, General Land Office, Geological Survey, and the Secretary's Office. While, in consequence thereof, it has been necessary, in some instances, to extend the hours of labor, the service required has been cheerfully rendered, and the work dispatched in such an expeditious manner that I am gratified to state the public business is well in hand and there is but little arrears; such increase in the force, etc., as existing conditions appear to demand has been noted in departmental estimates to be brought to the attention of Congress in the manner prescribed by law.

Considerable progress has been made in the inauguration and carrying into effect of necessary reforms in various branches of the service.

The advisability of the early enactment of legislation looking to the reclamation of the arid lands of the country has been frequently mentioned in previous annual reports of the Department, and Congress at its last session recognized the national importance of irrigation by the passage of the reclamation law, approved June 17, 1902. This law creates a fund from the moneys received from sales of public lands, to be expended in the construction of irrigation works which pass ultimately into the control of the settler, the moneys received therefor to be applied to the further extension of the irrigation system. The act is general in character, and leaves to administrative action most of the details, thereby imposing upon the secretary of the Interior a very great responsibility in carrying it into effect.

New forest reservations have been established during the year, the forestry service extended, a better and more thorough system of patroling the reservations has been perfected, and the work of reforestation on the various reservations has been entered upon with satisfactory results.

The unlawful fencing of the public lands for grazing and other purposes referred to hereafter has greatly increased in some sections of the West and grown so flagrant as to cause much concern; vigorous measures, however, have been pursued regarding these unlawful occupants of the public domain, and prompt steps taken looking to the institution of civil or criminal proceedings against them.

Timber on the unreserved public lands can not now be properly protected; existing laws relating thereto, and especially the act of June 3, 1878, known as "the timber and stone act," if not repealed or radically amended, will result ultimately in the complete destruction of the timber on the unappropriated and unreserved public lands. The situation demands the passage of the remedial legislation on this subject hereinafter mentioned.

Under the act of January 14, 1898 (25 Stat. L., 642), the Chippewa Indians failed to receive the full amount of money to which they were entitled from the proceeds of the sales of timber on their ceded lands in Minnesota, owing to improper classification of lands, to fictitious values of timber fixed by incompetent estimators, and frauds perpetrated by the contractors for the handling of the timber. Under the act of June 27, 1902, enacted by Congress upon the recommendation of the Department, timber will be sold only under sealed bids and not at public auction. The measurement thereof will hereafter be made at the stump, and none is to be removed until it has been cut, banked, and scaled where cut; the quantity, as per scale, to be paid for at the price bid per 1,000 feet, insuring to the Indians full value for their property, a result which it was not practicable to obtain under the administration of the old law.

In the Indian service regulations have been adopted providing for the consideration of sealed bids for leases of Indian grazing lands, and awards made to the highest responsible bidder, thereby securing to the Indians a just return for the use of the leased lands. Under the old method of permitting the tribes to indiscriminately enter into contracts for the use of their lands, such a result was not practicable.

Agreements have been negotiated with the Five Civilized Tribes of Indian Territory whereby just allotments of land can be made to them in severalty. Provision has been made for the leasing of coal, asphalt, and other minerals in the Seminole, Creek, and Cherokee nations, respectively, and also for the sale of coal and asphalt lands in the Choctaw and Chickasaw nations, respectively, in such a manner as to protect the interests of all parties. A definite time has been fixed for

the closing of the citizenship rolls of the several Indian tribes, as a result of which, in all probability, it will be practicable for the Five Civilized Tribes Commission to finally close its work in the Territory within the next two years.

Detailed statements regarding the matters above mentioned will be found under appropriate headings in this report.

It affords me pleasure to acknowledge the valuable assistance cheerfully rendered by the Assistant Secretaries, the Assistant Attorney-General, the Heads of Bureaus, the Chief Clerk of the Department, and the chiefs of division of the Secretary's Office in the disposition of the public business.

OFFICE OF THE ASSISTANT ATTORNEY-GENERAL.

The force in this office is occupied in greater measure with the consideration of legal problems and claims arising under the laws of the United States relating to public lands and Indian affairs, and in lesser measure with the disposition of matters arising under the pension, patent, and other laws, the administration of which is committed to this Department.

The work is up to date, save as action on a few matters is suspended to await decisions by the courts upon test cases of like character.

The matters at this time awaiting consideration and disposition are: One hundred and ninety-four appeals from decisions of the Commissioner of the General Land Office, 26 motions for review of decisions heretofore rendered on such appeals, 40 miscellaneous matters, and 12 requests for law opinions by the Assistant Attorney-General.

The matters considered and disposed of during the last year are as follows: Eleven hundred and eighty-four decisions receiving the approval and signature of the Secretary of the Interior in appeals from decisions of the Commissioner of the General Land Office; 283 decisions receiving the approval and signature of the Secretary of the Interior upon motions for review; 707 decisions, regulations, and orders receiving the approval and signature of the Secretary of the Interior in miscellaneous matters; 54 law opinions receiving the signature of the Assistant Attorney-General and the approval of the Secretary of the Interior; 2,689 decisions upon pension appeals receiving the approval and signature of the Assistant Secretary of the Interior.

The more important of the land decisions and opinions are included in volume 31 of the land decisions, now in course of publication. A digest in two volumes of the land decisions has been prepared in this office and recently published.

The Assistant Attorney-General and his assistants have also been engaged in presenting and protecting the Government's interests in a

considerable amount of litigation in the courts of the District of Columbia and in the Supreme Court of the United States. Notable among the cases are Maese *v.* Hermann (183 U. S., 572) and Minnesota *v.* Hitchcock (185 U. S., 373).

I desire to most earnestly commend the able manner in which the extremely difficult public business intrusted to this office has been administered.

LANDS.

There were disposed of during the fiscal year ended June 30, 1902, public lands aggregating 19,488,535.30 acres, classified as follows: Cash sales, 1,757,592.63 acres; miscellaneous entries, embracing homesteads, land warrants, scrip locations, State selections, swamp lands, railroad and wagon-road selections, Indian allotments, etc., 17,614,792.55 acres, and Indian lands, 116,150.12 acres, showing an increase of 3,925,739 acres as compared with the aggregate disposals for the preceding fiscal year.

The total cash receipts during the fiscal year from various sources, including disposal of public land, $5,880,088.65; and Indian land, $288,666.68; from depredations on public lands, $41,415.97; from sales of timber on forest reserves, $27,478.70; from sales of Government property, $1,014.45, and for furnishing copies of records and plats, $23,262.73; aggregate, $6,261,927.18, an increase of $1,289,766.39 over the preceding fiscal year.

The total expenses of district land offices for salaries and commissions of registers and receivers, incidental expenses, and expenses of depositing public moneys during the fiscal year ended June 30, 1902, were $818,498.60, an increase, as compared with the fiscal year ended June 30, 1901, of $44,880.61.

The net surplus remaining in the Treasury at the end of the fiscal year, after deducting from the total cash receipts the entire amount of expenses and liabilities incident to the administration of the public land system, equaled $4,580,338.78, an increase over the surplus remaining at the end of the preceding fiscal year of $1,221,897.11. Attention is also directed to the fact that the cash receipts from depredations on the public lands, compromises, fines, etc., amounted during the fiscal year to $284,078.85, an increase over the preceding fiscal year of $22,505.01.

The total area of the public lands may be stated to be approximately 1,809,539,840 acres, of which 893,955,476 acres are undisposed of, 151,161,638 acres have been reserved for various purposes, and 764,422,726 acres have been appropriated.

The following table, compiled from reports received from the various local land offices, gives, by States and Territories, an approximate esti-

mate of the reserved as well as the unappropriated lands in the land States and Territories at the close of this fiscal year:

State or Territory.	Area unappropriated and unreserved.			Area reserved.	Area appropriated.
	Surveyed.	Unsurveyed.	Total.		
	Acres.	*Acres.*	*Acres.*	*Acres.*	*Acres.*
Alabama	304,060		304,060	51,520	32,302,340
Alaska	(a)	367,983,506	367,983,506	b 120,174	(a)
Arizona	11,156,346	36,137,316	47,293,662	19,724,717	5,773,941
Arkansas	3,008,215		3,008,215	2,560	30,532,905
California	33,601,480	7,950,954	41,552,434	16,033,270	42,384,216
Colorado	34,130,115	4,294,297	38,424,412	5,658,303	22,265,445
Florida	1,275,244	160,070	1,435,314	19,259	33,618,067
Idaho	12,375,308	29,927,351	42,302,659	1,331,311	9,659,470
Illinois					35,842,560
Indiana					22,950,400
Indian Territory				10,658,880	
Iowa					35,646,080
Kansas	979,608		979,608	987,875	50,415,237
Louisiana	145,055	65,018	210,073	1,468,434	27,376,853
Michigan	386,170		386,170	120,535	36,312,495
Minnesota	1,533,635	2,019,508	3,553,143	5,000,508	42,644,429
Mississippi	152,540		152,540		29,532,580
Missouri	269,541		269,541		43,526,299
Montana	17,454,210	43,985,304	61,439,514	14,999,417	17,154,669
Nebraska	8,980,857		8,980,857	606,611	39,549,812
Nevada	30,154,755	31,145,063	61,299,818	5,983,409	3,053,413
New Mexico	40,821,541	14,335,575	55,157,116	6,385,181	16,886,503
North Dakota	10,121,977	4,949,500	15,071,477	3,325,490	26,513,113
Ohio					26,062,720
Oklahoma	3,789,976		3,789,976	3,754,849	17,229,575
Oregon	23,597,960	8,275,711	31,873,671	5,878,411	23,525,358
South Dakota	10,985,547	397,866	11,383,413	12,791,676	25,031,311
Utah	10,865,862	31,242,617	42,108,479	5,571,068	4,858,893
Washington	4,945,116	6,128,145	11,073,261	10,546,165	21,127,454
Wisconsin	139,244		139,244	365,353	34,770,283
Wyoming	40,804,945	2,978,368	43,783,313	10,773,662	7,876,305
Grand total	301,979,307	591,976,169	893,955,476	151,161,638	764,422,726

a The unreserved lands in Alaska are mostly unsurveyed and unappropriated.
b So far as estimated.

PATENTS ISSUED.—Forty-one thousand one hundred and forty patents for agricultural lands were issued during the fiscal year, containing approximately 6,583,672.33 acres, a decrease of 1,097 in number and 174,247.67 in acreage as compared with the previous year. Of mineral and mill-site patents 1,553 were issued, an increase over the former year of 165 patents and of 6,796.94 acres. One hundred and eight coal patents were issued, embracing 12,799.10 acres, an increase over the previous year of 4 patents and 738.23 acres.

RAILROAD AND WAGON-ROAD LAND PATENTS.—During the fiscal year there have been certified or patented on account of railroad grants 4,851,353.41 acres, as against an area patented during the fiscal year

ended June 30, 1901, of 2,470,804.55 acres, an increase of 2,380,548.86 acres. There were patented under wagon-road grants 156,778.25 acres, a decrease compared with the preceding year of 8,768.93 acres.

ADJUSTMENTS.—The report of the Commissioner shows that material progress has been made in the examinations necessary to the adjustment of railroad and wagon-road land grants, including the administration of the acts of July 1, 1898 (30 Stat. L., 597–620), March 2, 1899 (30 Stat. L., 994), and March 2, 1901 (31 Stat. L., 950), relating to grants to the Northern Pacific Railroad Company. A detailed statement of the progress made in the adjustment of these grants will be found at page 53 of said report.

SWAMP LAND PATENTS, SCHOOL, AND OTHER STATE AND TERRITORIAL LANDS.—There were patented as swamp lands in place 68,744.97 acres, and as swamp land indemnity lands 19,893.78 acres, a total of 88,638.75 acres, a decrease compared with the amount patented during the last fiscal year of 130,564.94 acres. Indemnity, school, and other selections were made and certified during the year under their several grants to the various States and Territories to the amount of 1,003,793.09 acres, a decrease of 239,726.83 acres as compared with the preceding year.

INDIAN AND MISCELLANEOUS PATENTS.—Patents of this class were issued during the year to the amount of 1,753,591.76 acres, an increase over the preceding fiscal year of 1,305,055.36 acres.

The total net increase in lands patented over the preceding fiscal year is 3,146,718.69 acres.

STATE DESERT-LAND SEGREGATIONS.—By section 4 of the act of August 18, 1894 (28 Stat. L., 372–422), as amended by the act of June 11, 1896 (29 Stat. L., 413 434), and act of March 3, 1901 (31 Stat. L., 1133–1188), provision is made for the donation to each of the desert-land States of not more than 1,000,000 acres of such lands. Under these acts there was approved one list, embracing 244,025.98 acres, selected by the State of Idaho.

ENTRIES IN ALASKA.—As recommended in my last annual report, the Yukon and Circle land districts in Alaska were abolished and their offices consolidated with the Sitka office.

One town-site entry and 34 nonmineral entries have been made in Alaska under the provisions of sections 11 to 14, act of March 3, 1891 (26 Stat. L., 1095), as amended by section 10, act of May 14, 1898 (30 Stat. L., 409).

Twelve of the nonmineral entries have been patented during the last fiscal year, 10 having been previously patented, and 9 canceled, leaving 3 suspended for insufficiency of proof submitted, or other causes.

RESERVOIRS FOR THE PURPOSES OF STOCK BREEDING AND TRANSPORTATION.—Under the act of January 13, 1897 (29 Stat. L., 484), the number of declaratory statements on hand at the beginning of the fiscal year was 9,596. There were received during the year 314, making

the total requiring action 9,910. Of this number, 3,070 were acted upon, of which 2,175 were canceled or relinquished and the remainder, 895, were found to be in proper form and await further action under the law by the declarants. There were, accordingly, pending for action at the end of the fiscal year 7,728.

RIGHTS OF WAY FOR RAILROADS.—Under the act of March 3, 1875 (18 Stat. L., 482), providing for rights of way over public lands, the act of May 14, 1898 (30 Stat. L., 409), providing for rights of way in Alaska, and various special acts, 51 articles of incorporation were accepted; 595 maps of locations of railroads were on hand for action during the year, of which 146 were approved, 11 filed (not requiring approval); 8 were pending at the end of the fiscal year before the Secretary of the Interior, and 375 had been otherwise disposed of, a few of which were rejected and the rest returned for correction.

RIGHTS OF WAY FOR IRRIGATION AND OTHER PURPOSES.—Under the provisions of sections 18 to 21, inclusive, of the act of March 3, 1891 (26 Stat. L., 1095), as amended by section 2 of the act of May 11, 1898 (30 Stat. L., 404), right of way has been approved to 332 companies, individuals, and associations of individuals, of which 50 received their first approval during the past year.

Under the act of January 21, 1895 (28 Stat. L., 635), "An act to permit the use of right of way through the public lands for tramroads, canals and reservoirs, and for other purposes," as amended by section 1 of the act of May 11, 1898 (30 Stat. L., 404), applications for permission to use right of way have been approved to 10 companies, individuals, and associations of individuals, of which one received its first approval during the past year.

There were received during the year under these acts six maps, which, with those already pending, made a total of eight maps requiring action during the year. One was approved and four otherwise disposed of, most of them being returned for correction.

Under the act of May 14, 1896 (29 Stat., L. 120), entitled "An act to amend the act approved March 3, 1891, granting right of way upon the public lands for reservoir and canal purposes," there have been approved the applications of 15 companies, individuals, and associations of individuals.

Under the act of February 15, 1901 (31 Stat., L. 790), entitled "An act relating to rights of way through certain parks, reservations, and other public lands," there were filed during the year 38 maps, which, with those pending under the act of 1896, made a total of 45 maps requiring action. Eight of these were approved and 32 otherwise disposed of, most of them being returned for correction.

Under all of the foregoing acts there were on hand requiring action during the year 1,089 maps, 984 of which were disposed of during the year, leaving a total on hand awaiting action at the end of the fiscal year of 105 maps.

In my report of last year attention was called to the fact that the above-designated acts constituted a group of statutes the administration of which has been the source of much embarrassment because of the unnecessarily large number of acts and the confusing amendments, while they do not, after all, cover the whole subject in a satisfactory manner, failing to provide for certain important uses of right of way and being otherwise too limited in scope.

Attention was also called to the necessity for legislation that would empower the Secretary of the Interior to declare a forfeiture of a lapsed right of way for railroads, canals, reservoirs, etc., over the public lands and reservations of the United States, after notice to grantee.

With the purpose in view of securing legislation along the lines indicated, the Department, on April 4, 1902, transmitted to Congress such a bill as in its judgment would meet the requirements of the case, with the recommendation that it receive the approval of Congress and be introduced as a substitute for Senate bills 3374 and 3711, relating to the same subject.

On June 4, 1902, the Committee on Claims submitted a report on Senate bill 3374, in which it was recommended that the title of the bill be amended by striking out the same and inserting in lieu thereof the following: "A bill providing for rights of way in and through public lands, reservations, and certain national parks, and for other purposes," and it was further recommended that the bill be amended by striking out all after the enacting clause and inserting in lieu thereof practically the provisions of the bill transmitted to Congress by my letter of April 4, supra.

In view of the importance of this proposed legislation, I earnestly urge the passage of Senate bill 3374, as amended.

PUBLIC SURVEYS.—By the act of Congress approved March 3, 1901 (31 Stat. L., 1159), making appropriations for the sundry civil expenses of the Government for the fiscal year ending June 30, 1902, and for other purposes, there was appropriated "for surveys and resurveys of public lands" the sum of $325,000, of which amount the Commissioner of the General Land Office was authorized to expend as much as he might deem necessary for examinations in the field, etc.

The sum of $75,000 was set aside to cover the cost of field examinations, and the sum of $10,000 was reserved for emergencies, leaving $240,000 to be apportioned among the several surveying districts. The apportionments made to the several districts were as follows:

Alaska	$5,000	Nevada	$10,000
Arizona	12,000	New Mexico	8,000
California	13,000	North Dakota	20,000
Colorado	6,000	Oregon	22,000
Idaho	32,000	Utah	15,000
Minnesota	5,000	Washington	30,000
Montana	42,000	Wyoming	20,000

Further apportionments were made from time to time to several surveying districts from the fund of $10,000 held in reserve, and contracts were let and approved to practically the full extent of the means available. The annual surveying instructions for the fiscal year ending June 30, 1901, will be found in the appropriate place in the Commissioner's report.

Surveys were accepted during the fiscal year, after examination in the field, careful comparison of the surveying returns, and inspection of plats and field notes, covering 9,267,978 acres, distributed as follows:

Alaska	1,133	Nevada	660,996
Arizona	322,866	North Dakota	353,456
California	56,345	Oregon	794,104
Colorado	258,388	South Dakota	1,401,141
Florida	3,049	Utah	798,200
Idaho	1,336,495	Washington	307,316
Minnesota	524,654	Wyoming	395,318
Montana	1,890,353	New Mexico	164,164

ALASKAN SURVEYS.—By the act of March 3, 1899 (30 Stat. L., 1097), the rectangular system of surveys was extended to the district of Alaska, but no surveys under that system have as yet been executed in that district, nor has the pending contract for the establishment of a principal meridian and several parallels, issued to A. J. Adams and referred to in my last annual report, been executed.

The report of the surveyor-general shows that 63 mining locations were approved during the year, with 65 others awaiting final action, and that 20 surveys of this class were filed, embracing 70 different mining claims.

The non-mineral surveys were for the most part of additional homesteads, with a few sites for trade and manufacture and military reservation, and a site for the Sitka Magnetic Observatory. Of this class there were pending on July 1, 1901, 29; received during the year, 97; total, 126; approved during the year, 85; suspended, 12; rejected, 5; awaiting action June 30, 1902, 24.

The surveyor-general recommends an appropriation of $113,872 for surveys in the district of Alaska for the next fiscal year. The grounds upon which he urges this appropriation are the necessity of establishing the rectangular system of surveys; of protecting the numerous interests that have within the past few years been developing in that district, and of preventing conflict between the mission, church, and school reservations on the one hand, and claims under the various public-land laws on the other, which are sure to arise if delay of surveys because of inadequate appropriation be longer continued.

BOUNTY-LAND BUSINESS. The following is a statement of the number of acres represented by military bounty-land warrants located in the several land States and Territories for the year ended June 30, 1902, or not heretofore reported, which warrants were issued under

the acts of 1847, 1850, 1852, and 1855. The aggregate number of acres is computed at the rate of $1.25 per acre. It does not show the exact area of the lands located with the warrants.

	Acres.		Acres.
Arkansas	3,600	Minnesota	2,080
Colorado	120	North Dakota	1,920
California	1,520	Oregon	480
Louisiana	680	Total	10,560
Montana	160		

Summary of warrants.

	Denomination of warrants.				Total.
	40 acres.	80 acres.	120 acres.	160 acres.	
Act of—					
1847	2			2	400
1850	4	5		2	880
1852					
1855		9	14	43	9,280
Total	6	14	14	47	10,560

PROTECTION OF PUBLIC LANDS.—During the year an average of 58 special agents were employed in the investigation of fraudulent land entries, and in otherwise protecting the public lands from illegal appropriation and timber trespass; 2,010 cases were referred to them for investigation; hearings were ordered in 213 cases; 1,501 entries were held for cancellation; 921 were canceled; and 940 examined and passed. Final action was taken on 1,978 cases, and there are now pending 5,468 cases.

There are also pending in the General Land Office 461 agents' reports on land claims, 34 records of hearings, and 827 registers and receivers' reports and miscellaneous letters.

DEPREDATIONS UPON PUBLIC TIMBER.—There were 482 cases of depredations upon public lands reported during the year, involving property of the value of $1,435,186, recoverable to the Government, including one case of trespass on coal lands, involving 210,000 tons of coal, of the estimated value of $664,278.28. One hundred and seven civil suits were recommended to recover damages estimated at $873,562.90; 131 propositions of settlement were accepted to the amount of $33,765; and there was received from sales of timber cut unlawfully from public lands the sum of $11,625.35. There were also 124 criminal suits recommended. There was received from compromises effected under section 3469, United States Revised Statutes, $43,265.58. In addition, the amount involved in fines imposed and judgments rendered is $195,422.92, making a total of $284,078.85, an increase of $22,505.01 over the preceding fiscal year.

On June 30, 1902, there were pending in the United States courts 168 civil suits for the recovery of a total amount of $2,970,151.10, the alleged value of the timber involved, and 324 criminal prosecutions for cutting and removing timber in violation of law.

COMPULSORY ATTENDANCE OF WITNESSES.—The recommendations made by the General Land Office and by this Department in previous years for needed legislation compelling the attendance of witnesses at hearings ordered on special agents' reports, before the local land offices, are renewed. Attention is earnestly invited to the urgent need existing for such legislation.

UNLAWFUL FENCING OF PUBLIC LANDS.

The avowed policy of the Government to preserve the public domain for homes for actual settlers has no more implacable and relentless foe than the class that seeks to occupy the public lands for grazing purposes, by maintaining unlawful fences thereon.

The fight between this class and the Government has been going on for years and resulted, seventeen years ago, in the passage of the act of February 25, 1885 (23 Stat. L., 321), which provides for the institution of civil proceedings for the removal of such fences and criminal prosecution of the trespassers, and authorizes the President, if necessary, to call out the civil and military authorities to remove such unlawful inclosures; but notwithstanding the passage of said act and the efforts of this Department to enforce it the abuse has continued, and the beneficiaries thereof have grown so bold and arrogant that they practically defy the efforts of the Department and the Government to execute the law.

There is now pending before Congress a bill entitled "A bill to provide for the leasing, for grazing purposes, of the vacant public domain, and reserving all rights of homestead and mineral entry, the rentals to be a special fund for irrigation."

A copy of said bill, together with the very excellent report of the Commissioner of the General Land Office, adverse to its passage, and my letter transmitting said report, with my approval thereof, to the Public Lands Committee of the Senate, will be found beginning at page 167 of the Appendix to this report, marked, respectively, Exhibits A, B, and C.

Should that bill become a law, the public domain in the 16 States and Territories mentioned therein, aggregating an area of 525,000,000 acres, practically all of the vacant public domain west of the Mississippi, would be subject to lease at 2 cents per acre for ten years, with a privilege of renewal for ten years more. During the last fiscal year there were made within that area 53,654 original homestead entries and 27,904 final homestead entries, embracing over 12,000,000 acres and affecting

85,558 persons; and during the present fiscal year indications are that more entries will be made, affecting more people, and embracing a greater acreage. It is needless to say that such a bill, if enacted into law, would place the last acre of desirable public land out of the reach of the home seeker and defeat the purpose of the Government to preserve the public domain for homes for actual settlers.

It would also defeat the operations of the reclamation act approved June 17 last, and make possible the formation of a land monopoly never contemplated by the public land system, but which, on the contrary, it is one of the purposes of that system to prevent.

For numerous other objectionable features, reference is had to the copy of the bill in the Appendix, and to its discussion by the Commissioner of the General Land Office in his report.

During the past year the localities in which the largest number of cases of unlawful fencing have been found were the State of Nebraska and the Territory of New Mexico.

In Nebraska it is alleged that a large part of the public domain is under fence in some manner or other, and that the homestead law is practically a dead letter. What is known as "hobo filing," the making of entries by tramps and other irresponsible persons in the interest of those desiring to obtain large quantities of public lands for grazing purposes, so it is averred, is there resorted to.

The Department is using every effort, with the limited force at its command, to break up this practice, have the fences removed and the land illegally inclosed thrown open to occupation by actual settlers, and the trespassers brought to justice.

In the Territory of New Mexico 1,079,000 acres of public lands are embraced within the unlawful inclosures of the Interstate Land Company. Under representations to this Department that its order to remove said fence by April 1, 1902, would prevent the execution by the company of contracts to deliver large quantities of stock on June 1, in that removal of the fences would cause an intermingling of the herds and great financial loss, the President authorized an extension of time for the removal of said fences to July 1, 1902. The understanding was that the fences would be removed at that date. They were not removed then, and said company manifests no disposition to remove them. In fact, its attitude is one of defiance and of utter contempt for the law of February 25, 1885, and of either the disposition or the ability of the Government to enforce it.

The company assumes an exemption from criminal prosecution, and hopes that by continuances, appeals, and other delays incident to civil proceedings it can indefinitely prolong the adjudication of any action that may be brought against it to remove its fences, and also indefinitely continue its unlawful occupation of the public lands.

The matter is now in the hands of the proper officers with a view to the institution of proceedings under the act of February 25, 1885, to cause the removal of said fences and punish the trespassers.

Pressure of all sorts has been brought to bear on this Department to cause a cessation of the vigorous policy it has pursued against these unlawful occupants of the public domain. It has been frequently alleged by them that the Department has been making war upon the cattle industry of the West, and they have written letters to different breeders of cattle in the eastern and middle western States, and presented to them the argument that their occupation would suffer if the zeal of the Government were not abated; and these breeders in the eastern and middle western States have, in some instances, written to their Senators and Representatives in Congress, who have in turn written to this Department. Copy of a letter written by a citizen of one of the middle western States to his Representative in Congress, and of the letter of the Representative to this Department, with my reply thereto, will be found beginning at page 175 of the Appendix to this report, marked, respectively, Exhibits D, E, and F.

In such correspondence, as in every other effort by those who seek to prevent the removal of such unlawful fences, it is sought to evade and obscure the only question at issue. It is the duty of this Department to enforce the laws relative to the public domain. One of these laws, which "forbids and prohibits" the unlawful occupancy or fencing of the public domain, is being continuously and persistently violated. Under such circumstances a conscientious executive officer, with a proper conception of the nature of his oath can pursue but one course. As stated by the United States Supreme Court in the case of Canfield *v.* United States (176 U. S., 524):

> It (the Government) would be recreant to its duties as trustee for the people of the United States to permit any individual or private corporation to monopolize them (the public lands) for private gain and thereby practically drive intending settlers from the market. It needs no argument to show that the building of fences upon the public lands with intent to inclose them for private use would be a mere trespass, and that such fences might be abated by the officers of the Government or by the ordinary processes of courts of justice.

The parentheses are mine.

During the last year there were reported to the General Land Office 153 cases of unlawful fencing of public lands, embracing 3,952,844 acres. In one case one man was shown to have under fence over 60,000 acres of lands that are subject to disposition under the public-land laws, but which he withholds from such disposition in defiance of the law he is openly and notoriously violating, and of the rights of those who are entitled to the benefits and protection of the public-land system. There were also reported as having been removed during the year, in compliance with notice requiring such action, 9 inclosures, embracing

an area of 24,564 acres; 144 cases were reported as in process of removal or were laid before the United States attorneys of the various States and Territories for action under act of February 25, 1885 (23 Stat. L., 321), embracing 3,928,280 acres.

ENTRIES BY SOLDIERS' WIDOWS.—Sections 2304, 2305, and 2306 of the United States Revised Statutes confer upon soldiers, sailors, and marines who served ninety days or more during the war of the rebellion homestead and additional homestead rights, and section 2307 provides that upon the death of any soldier, sailor, or marine whose rights are defined by the sections above stated, his widow, if unmarried, or in case of her death or marriage then his minor orphan children, by a guardian duly appointed and officially accredited at the Department of the Interior, shall be entitled to all of the benefits enumerated in the sections above referred to, subject to all the conditions as to settlement and improvement therein contained.

One of the methods resorted to by those seeking to acquire control of large portions of the public domain is to have the widows of soldiers make entry of lands under the law above cited. The speculator furnishes all the money, pays all the fees, and pays the widow a liberal compensation for her services in the matter.

Unquestionably an entry made in good faith by the widow of a soldier under the section above mentioned would be valid. It is the purpose of the Department to investigate all of such entries, to ascertain whether they were made for speculative purposes and in the interest of any person or persons other than the widow.

It is evident that a law passed by Congress for the benefit of the defenders of the country and their widows and orphans was never intended to be used as a vehicle to enable speculators to obtain title to the public domain intended for homes for actual settlers.

SOLDIERS' ADDITIONAL HOMESTEAD ENTRY FRAUDS.—During the fiscal year ten convictions have been secured for frauds committed in connection with soldiers' additional assignments executed in Arkansas. A most systematic conspiracy for the purpose of defrauding the Government in these cases was discovered to be in existence during the latter part of 1901 in this State, which has been completely broken up, and all the members of the gang sentenced to periods of imprisonment in the United States penitentiary at Fort Leavenworth ranging from three years down, together with the imposition of fines.

The Commissioner of the General Land Office reports that in the States of Minnesota, Wisconsin, and Michigan many applications have been suspended and rejected which were found to be clearly fraudulent.

TIMBER ON UNRESERVED LANDS.

For several years this Department has been urging the enactment of legislation to regulate the sale and use of timber on the unappropriated and unreserved public lands. The experience of this Department has been that the act of June 3, 1878, which authorizes residents of certain States and Territories therein named to cut and remove for building, agricultural, mining, and other domestic purposes any timber growing on mineral lands under rules and regulations prescribed by the Secretary of the Interior and the act of March 3, 1891 (26 Stat. L., 1093), as extended by the acts of February 13, 1893 (27 Stat. L., 444), and March 3, 1901 (31 Stat. L., 1436), authorizing the residents of the States and Territories therein named to take timber from nonmineral public lands in such States and Territories for use therein for agricultural, mining, manufacturing, or domestic purposes, under rules and regulations prescribed by the Secretary of the Interior, *and the act of June 3, 1878 (20 Stat. L., 89), known as the timber and stone act, will, if not repealed or radically amended, result ultimately in the complete destruction of the timber on the unappropriated and unreserved public lands.*

The rapidity with which the unreserved and unappropriated public timbered lands are being denuded of their timber under the acts above mentioned, and the opportunity offered under the timber and stone act for the fraudulent acquisition of title to public timbered lands at the uniform price of $2.50 per acre when they are in many instances worth forty times that, has been heretofore set forth in the pages of my annual reports and those of my predecessors.

In order to put an end to such an undesirable system of disposing of the public timber and the public timbered lands, I, on March 2, 1900, transmitted to both branches of Congress a bill embodying the views of the Commissioner of the General Land Office and this Department on this subject.

Said bill was subsequently introduced in the Senate and House, respectively, but was never enacted into law, and, on the 4th of February, 1901, I again urged the passage of said proposed legislation, with an amendment thereto recommended by the Acting Attorney-General.

Repeating my efforts along that line I, on February 8, 1902, transmitted to the chairman of the Committee on Public Lands of the House of Representatives a report on H. R. 4371, "To authorize and regulate the sale and use of timber on the unappropriated and unreserved public lands, and prevent depredations thereon," and recommended certain amendments thereto. Said bill is almost identical with that recommended by me on March 2, 1900. *The need of the passage of*

such an act is so imperative that I earnestly recommend that the pending bill, H. R. 4371, with the amendments suggested by this Department, be enacted into law at the earliest possible date.

The provisions of said bill deal with every possible interest that could be affected by a measure of that character. Its terms are fair and equitable and meet every reasonable demand that could be made by those requiring the use of timber from the unappropriated public timbered lands. A copy of said bill, with the amendments recommended by this Department, will be found at page 177 of the Appendix to this report, marked "Exhibit G."

In this connection and for the purpose of emphasizing the above recommendation, attention is called to the fact that the reports from one public land State alone for the quarter ending June 30, 1902, show that the number of timber and stone entries was 331 during that quarter, embracing 48,585.50 acres; that during the quarter ending September 30, 1902, the number of entries had increased to 1,183, embracing 181,052.02 acres, an increase during the last over the preceding quarter of 852 entries and 132,466.52 acres, and in another State during the same period there was an increase of 294 entries and 45,086.28 acres.

Should this rate of entry continue during the entire year in that one State it would mean the acquisition, in round numbers, of 600,000 acres of timber lands under the timber and stone act, and if the same activity in that class of entries were extended to the other public land States, then before the expiration of two years practically every acre of unappropriated public timbered lands would have been absorbed and the successful operation of the reclamation act of June 17 last rendered doubtful, if its failure be not absolutely assured, for the reservation of public timbered lands that must of necessity be made to assist in conserving the waters to be impounded by the irrigation systems to be established under that act, will be defeated or made so expensive by the purchase of said lands from private owners as to greatly delay the completion of the irrigation systems contemplated by that act.

The reports of the special agents of this Department in the field show that at some of the local land offices carloads of entrymen arrive at a time, every one of whom makes entry under the timber and stone act. The cost of 160 acres of land under that act, and the accompanying commissions, is $415. As many as five members of a family, who, it can be readily shown, never had $2,075 in their lives, walk up cheerfully and pay the price of the land and the commissions. Under such circumstances there is only one conclusion to be drawn, and that is that where a whole carload of such people make entry under that act, the unanimity of sentiment and the cash to exploit it must have originated in some source other than themselves.

In all such cases a rigid inquiry will be instituted to determine the

bona fides of the entry, and if it be ascertained that the entry was not made in good faith, but in the interest of some person or persons other than the entryman, the entry will be promptly canceled and proper criminal proceedings instituted against the entrymen.

Another method resorted to by unscrupulous speculators to obtain timber upon the unreserved timbered lands, and to which the attention of the Department has been called by its special agents, is the location of so-called mining claims under the placer-mining laws. Quite a number of such claims have been located in fine bodies of timber in a number of the western States. So far as the records of the Land Department show, these lands are unappropriated public lands, and there is nothing to call the Department's attention to them, and it would never know of these locations unless reported by a special agent or the locator should apply for a patent. Assuming the land to be really mineral, so long as the locator does the annual assessment work required by law he will be entitled to maintain possession of the tract embraced in his mineral location. If it be made for speculative purposes only, and for the purpose of acquiring the timber within the limits of the location, the only way by which the Government can reach him will be by a careful investigation of the character of the land upon which the location is made, and if, after such investigation, it be determined that the land is not mineral in character and that the location is made for speculative purposes, to arrest the locator as soon as he begins to cut the timber. The only defense he can make will be to show that the land is mineral in character and that he is cutting the timber to develop his claim as allowed by law. Should he fail in that, he will have to pay the penalty.

From the foregoing it will be seen that the duty of protecting the public domain from the inroads of those who seek to despoil it is an onerous one, and is a matter that should receive the early and careful consideration of the Congress.

FOREST RESERVES.

There are now 54 forest reserves, created by Presidential proclamations under section 24 of the act of March 3, 1891 (26 Stat. L., 1095), embracing 60,175,765 acres.

During the last fiscal year four existing reserves have been enlarged, four have been reduced, and fifteen additional have been established, as follows:

Enlarged: San Francisco Mountains Forest Reserve, Big Horn Forest Reserve, Yellowstone Forest Reserve, Teton Forest Reserve.

Reduced: Cascade Range Forest Reserve, Olympic Forest Reserve, San Jacinto Forest Reserve, White River Forest Reserve.

Established: Wichita Forest Reserve, Payson Forest Reserve, Santa Rita Forest Reserve, Santa Isabel Forest Reserve, Niobrara Forest

Reserve, Dismal River Forest Reserve, Medicine Bow Forest Reserve, Santa Catalina Forest Reserve, Mount Graham Forest Reserve, Lincoln Forest Reserve, Chiricahua Forest Reserve, Little Belt Mountains Forest Reserve, Madison Forest Reserve, The Alexander Archipelago Forest Reserve, The Absaroka Forest Reserve.

It is the policy of the Department to temporarily withdraw from settlement, entry, sale, or other disposal, such public lands as are included within the limits of projected new forest reserves or additions to those already created. Such withdrawals have been made during the past year in the following cases:

States and Territories.	Name of proposed forest reserve.	Name of forest reserve proposed to be enlarged.
Arizona	Rio Verde	
California	Stony Creek	
Colorado		South Platte.
Idaho	Henrys Fork	
Idaho and Montana	Kootenai	
Minnesota	Lake Superior	
Montana		Flathead.
Nebraska	North Platte	
Oregon		Ashland.
Do	Elk Creek	
Do	Blue Mountains	
Utah	Aquarius	
Do	Gunnison	
Do	Logan	
Do	Manti Canyon	
Do	Wasatch (including proposed Manti Canon Forest Reserve).	
Do	Sevier	
Wyoming		Big Horn.
Do		Teton.

In my last report I discussed at some length the purpose and necessity of forest reserves and the method and character of service that should be observed in their administration. It is believed that a careful investigation of the forest-reserve system adopted by this Department, in view of the obstacles with which it has had to contend, will justify all that has been done in that direction in the mind of every candid and unprejudiced investigator.

The fact that the forest fires that have raged with such devastation during the past season throughout the West have been confined almost wholly to the unreserved timbered lands, speaks volumes for the efficiency of the patrol system which has guarded and preserved the forest reserves from that destructive element, and of itself has no doubt resulted in a saving of public property the value of which is far in excess of the appropriation required to maintain and administer the forest-reserve system.

The adequate protection of the forest reserves and the extension

thereof to other public timbered lands as occasion arises must of necessity go hand in hand with the operations looking toward the reclamation of the arid lands of the West under the reclamation act approved June 17, 1902.

Notwithstanding that patent fact, and the great benefit that forest reserves have already been to that section of the country, and will continue to be, a pernicious activity on the part of some person or persons, through interest or ignorance, to create sentiment adverse to forest reserves in communities affected thereby has been going on of recent months, as the correspondence of this Department will show.

In order to set right those who have been influenced by that adverse sentiment, through lack of information, attention is called to the following facts concerning forest reserves:

THE OBJECT OF RESERVES.—The object of setting land aside for forest reserves is—

1. To protect a growth of timber on land which is not fit to grow other crops and under conditions where no such protection is assured or can be supplied by private persons or local authorities.

2. To keep a growth of vegetation, especially of timber on mountain lands which would otherwise wash and gully.

The timber and other vegetation protects the ground against this erosion or washing away, and in doing so it performs two things, both very important functions:

It prevents the rain and snow water from rushing off as fast as it otherwise would and thus prevents *floods*.

It maintains a pervious layer of earth into which the water can soak and be *stored* up for the summer months, when, in most western States, it is needed for irrigation.

Forest reserves have been and are created from lands (nearly all mountain lands) unfit for agriculture for reasons of altitude and consequent climate usually reinforced by poverty or insufficiency of soil. These lands generally bear a stand of timber or indicate that they have borne such and are likely to be restocked with forests if protected. Where these mountain forests have not been reserved and have passed into private ownership their history has generally been that of the Northern pineries and other forest areas. They are culled over for whatever will pay the expense of exploitation, the cutting is careless and wasteful, the profits of the timberman small and to the district much smaller. Since this work of denudation is a temporary matter it does little for the permanent improvement of the locality, but leaves behind it the characteristic ruins of abandoned sawmills and the devastated, fire-scorched mountain lands robbed of their forest and fertility alike and doomed for years, in many cases for centuries, to remain as unsightly, barren wastes where the much-needed waters gather unhindered to rush from the mountains and be wasted. To avoid this per-

manent injury to districts where every drop of water is precious, and where the protective function of the mountain forests, therefore, is of the greatest importance, is the first object of the creation of forest reserves. To husband an immense wealth of timber, to regulate its use, to utilize only the growth of these mountain forests and thereby insure a continued supply of one of the most important materials, is the second object of the reserve policy.

FOREST-RESERVE LAWS AND REGULATIONS.—A great deal of misunderstanding appears still to exist in regard to the laws and regulations concerning forest reserves and the consequent effect of the creation and maintenance of such forest reserves on the various local interests, particularly mining, prospecting, the use of timber and grass growing on the reserves, as well as the opportunity of building roads, railways, etc. It appears, too, that interested persons have made an effort to circulate misinformation with a view to producing erroneous impression and opinion, and to create adverse sentiment.

In general, it may be stated that the laws with regard to forest reserves have been framed with the utmost care to the local interests and their development, as will appear from the following:

MINING AND PROSPECTING.—This important industry is in no wise interfered with. Prospecting and mining may be and are carried on in forest reserves in exactly the same unrestricted manner as on the public domain outside of the reserves, so that the prospector and miner is especially privileged within forest reserves.

The following is the clause of the act of June 4, 1897, which secures this freedom to mining and prospecting in forest reserves:

> Nor shall anything herein prohibit any person from entering upon such forest reservations for all proper and lawful purposes, including that of prospecting, locating, and developing the mineral resources thereof: *Provided*, That such persons comply with the rules and regulations covering such forest reservations.

Accordingly the following rules have been promulgated and adhered to with regard to this industry:

LOCATION AND ENTRY OF MINERAL LANDS

The law provides that "any mineral lands in any forest reservation which have been or which may be shown to be such, and subject to entry under the existing mining laws of the United States and the rules and regulations applying thereto, shall continue to be subject to such location and entry," notwithstanding the reservation. This makes mineral lands in the forest reserves subject to location and entry under the general mining laws in the usual manner.

Owners of valid mining locations made and held in good faith under the mining laws of the United States and the regulations thereunder are authorized and permitted to fell and remove from such mining claims any timber growing thereon for actual mining purposes in connection with the particular claim from which the timber is felled or removed.

As a matter of experience it may be stated that of about 50 reserves only about four are without active prospecting, and that in several of

the reserves, notably the Black Hills, extensive mining has been carried on ever since the creation of the reserves.

In addition it may be stated that in all of these cases the reserve has proven an advantage rather than a hindrance to the bona fide prospector and miner in guarding him against bogus claimants and consequent blackmail, and also in providing the means of purchasing timber in such quantities as he requires, a matter of great importance, and one not provided for in the case of the nonreserved public lands.

USE OF TIMBER.—While for the open public lands there is no provision of law which enables the Department to sell timber in such quantities as are required for mining, agricultural settlement, etc., such provision is made for the forest reserves, much to the advantage of the people as well as the forests. Timber is disposed of in forest reserves in two ways:

1. It is given away free of charge to settlers and prospectors, etc., who require small quantities for buildings, fencing, fuel, etc.

2. It is sold in larger quantities to anyone at moderate prices and in the most expeditious manner.

The following is the law on this subject:

For the purpose of preserving the living and growing timber and promoting the younger growth on forest reservations, the Secretary of the Interior, under such rules and regulations as he shall prescribe, may cause to be designated and appraised so much of the dead, matured, or large growth of trees found upon such forest reservations as may be compatible with the utilization of the forests thereon, and may sell the same for not less than the appraised value in such quantities to each purchaser as he shall prescribe, to be used in the State or Territory in which such timber reservation may be situated, respectively, but not for export therefrom. Before such sale shall take place, notice thereof shall be given by the Commissioner of the General Land Office, for not less than sixty days, by publication in a newspaper of general circulation, published in the county in which the timber is situated, if any is therein published, and if not, then in a newspaper of general circulation published nearest to the reservation, and also in a newspaper of general circulation published at the capital of the State or Territory where such reservation exists; payments for such timber to be made to the receiver of the local land office of the district wherein said timber may be sold, under such rules and regulations as the Secretary of the Interior may prescribe; and the moneys arising therefrom shall be accounted for by the receiver of such land office to the Commissioner of the General Land Office, in a separate account, and shall be covered into the Treasury. Such timber, before being sold, shall be marked and designated, and shall be cut and removed under the supervision of some person appointed for that purpose by the Secretary of the Interior, not interested in the purchase or removal of such timber nor in the employment of the purchaser thereof. Such supervisor shall make report in writing to the Commissioner of the General Land Office and to the receiver in the land office in which such reservation shall be located of his doings in the premises.

The Secretary of the Interior may permit, under regulations to be prescribed by him, the use of timber and stone found upon such reservations free of charge by bona fide settlers, miners, residents, and prospectors for minerals, for firewood, fencing, buildings, mining, prospecting, and other domestic purposes as may be needed by such persons for such purposes; such timber to be used within the State or Territory, respectively, where such reservations may be located.

In carrying out this provision of the law every effort is made to avoid unnecessary delay, and the few restrictions are such as are demanded in any orderly system of business and such as are necessary to assure the proper continuance of a forest cover. In this way millions of feet of timber are given away each year to worthy settlers, and many millions more have been sold to mining concerns, contractors, lumbermen, and others, and in no case was there a disposition on the part of the Department to curtail the utility of the forest reserve as a proper source of forest supplies. Pamphlets fully describing the details of making applications, etc., and also the necessary forms, are distributed liberally among the people, so that everyone in and about all of the older forest reserves knows the manner of procedure, and it is safe to say that wherever the rules and regulations have been followed and respected the people have learned to recognize their value and prefer the present system of a regulated manner of utilizing the forest over the former reckless, help-yourself methods with their slashes and fire traps and with their heedless denudation and destruction.

In the management of the timber affairs, small amounts, such as a year's supply of materials needed by a settler, are given on permit issued by the supervisor or local officer, so that hardly an hour's delay need occur; larger amounts, with stumpage value of $100 or less, are sold, commonly without advertisement, so that the delay involves little more than the time necessary for the transmission of papers, while even in larger sales, where thirty days' advertisement is prescribed by law, provision is made for emergency cases, and the total amount of time needed in completing the transaction need never be more than is usual in dealings of a similar nature among private parties.

GRAZING ON RESERVES.

The grazing of cattle and horses (loose stock) is permitted in all reserves, and even the grazing of sheep, wherever the character of the reserve ranges appears to justify such grazing, has been allowed free of charge and with as little restriction as to time or season, locality, and the movement of the stock as is compatible with an economic use of the reserve pastures. All that is required of any person is a proper regard to the safety of the range, and particularly to the protection of the forest cover. In keeping with this policy and practice, the grazing of 1,197,000 head of sheep and 459,137 head of cattle and horses was allowed during the season of 1902, and thus one of the leading industries of the West was made profitable in many localities where the summer range of these mountain reserves is indispensable to the stockman. The beneficial effect of a regulated, orderly use of these ranges is well recognized and has made staunch friends for the reserves, so that in several localities reserves have been petitioned for

chiefly with a view to protecting the range against a heedless overgrazing, mostly by "tramp" herds whose owners have no interest in the development of the particular section.

SHEEP GRAZING.—The policy of the Department in regard to sheep grazing in forest reserves, embodied in my last annual report, is, for the information of all concerned, here restated:

> The localities covered by many of these forest reserves embrace areas that include the ranges over which large numbers of sheep for years past have grazed, and the wool-growing interests of those sections have insisted that any curtailment of their grazing privilege would be inimical, if not destructive, to that industry.
>
> On the other hand, those engaged in agricultural pursuits purely and who are directly interested in the conservation of the water supply for purposes of irrigation, which is the primary purpose for which these reservations are created, have contended with equal energy that sheep grazing in these reserves destroys the forest cover and so hardens the soil that the melting snows and the rainfall pass off in a flood, thus preventing the conservation of the water supply and defeating the purpose for which said reserves were created. With these contending interests clamoring before the Department for recognition, and each insisting on the absolute correctness of its theory, the Department has had no little embarrassment in determining upon a policy that would be fair to both of them.
>
> I recognize fully the vast interests involved in the woolgrowing industry, but I also recognize that the paramount question before the people of the West to-day, especially those in the arid regions, is how to properly conserve and protect the water supply so as to furnish a sufficient amount to answer all the demands for irrigating purposes, and the best solution that has yet been offered to that problem is the creation, the efficient patroling, and the proper administration of forest reserves.
>
> Under these circumstances I have adopted the policy of permitting sheep to graze in that portion of certain reserves where it is shown, after careful examination, that such grazing is in no way injurious to or preventive of the conservation of the water supply, and that policy it is my purpose to continue.
>
> Such a policy, in my judgment, will afford all the encouragement to the woolgrowing industry that it can reasonably ask in this connection from this Department, and is not inconsistent with those vast interests dependent upon irrigation, which demand consideration at my hands.

DEVELOPMENTS IN OTHER DIRECTIONS WITHIN FOREST RESERVES.—The use of water, the construction of canals, flumes, etc., also the building of trails, roads, and railways is fully secured by the organic act of 1897, in which it says:

> Nothing herein shall be construed as prohibiting the egress or ingress of actual settlers residing within the boundaries of such reservations, or from crossing the same to and from their property or homes; and such wagon roads and other improvements may be constructed thereon as may be necessary to reach their homes and to utilize their property under such rules and regulations as may be prescribed by the Secretary of the Interior. Nor shall anything herein prohibit any person from entering upon such forest reservations for all proper and lawful purposes, including that of prospecting, locating, and developing the mineral resources thereof: *Provided*, That such persons comply with the rules and regulations covering such forest reservations.
>
> The settlers residing within the exterior boundaries of such forest reservations, or in the vicinity thereof, may maintain schools and churches within such reservation, and for that purpose may occupy any part of the said forest reservation, not exceeding two acres for each schoolhouse and one acre for a church.

All waters on such reservations may be used for domestic, mining, milling, or irrigation purposes, under the laws of the State wherein such forest reservations are situated, or under the laws of the United States and the rules and regulations established thereunder.

And the law of March 3, 1899, which provides:

That in the form provided by existing law the Secretary of the Interior may file and approve surveys and plats of any right of way for a wagon road, railroad, or other highway over and across any forest reservation or reservoir site when in his judgment the public interests will not be injuriously affected thereby.

And here again it may be stated that as a matter of fact numerous roads and several railway lines have been constructed; extensive canals and pipe lines have been built in forest reserves, and in not a single case has the existence of the forest reserve added materially to the difficulties, either of obtaining the necessary rights or of properly conducting the business.

Similarly, privileges are granted to construct and maintain sawmills, hotels, stores, ferries and steamers on lakes and streams, etc., and in no case where the public needs and other conditions indicated a deserving case has such privilege been refused or the person conducting the business interfered with.

THE PROTECTION AND MANAGEMENT OF RESERVES.—This statement would seem incomplete without calling attention to the great value of a definite, well-organized system of protection and management. Small as the number of men may seem (and is) in comparison with the large area to be patrolled and served, yet each year illustrates more clearly the large return which the country obtains from a comparatively small outlay in this direction.

With fires in nearly all parts of the forested areas of Colorado, Wyoming, Washington, and Oregon, the forest reserves have remained during the past summer comparatively unharmed, thanks to the efforts of a few hundred energetic, well-directed men whose business it is to care for these forests. Thus a small sum well expended has saved a wealth of material, and, what is of more importance, it saved a forest cover worth far more as a protective and regulative body than as a source of timber supply. In addition, this organized body of men makes the mountain forests truly useful, and readily so, to the people of the West. While timber on the unreserved lands must go to waste for want of suitable legislation, and while these lands generally are in such a condition that a variety of legitimate uses is almost prevented by the lack of suitable arrangement to carry on business, the forest reserve is in condition such that every kind of legitimate use can be and is promptly attended to, and thus invites the law-abiding citizen to permanent development, while at the same time it prevents fraud and trespass, with all their train of mischief.

If the field force at the present is smaller than it should be in order to give as full a protection and as prompt service as has been clamored

for in certain quarters, this defect is one easily regulated and overcome by suitable appropriation, which should grow with the area of these reserves and the amount of the business performed thereon.

SALES OF TIMBER IN FOREST RESERVES.—There were pending at the beginning of the year 56 petitions for sale of timber in forest reserves, and 144 were presented during the year. Of these, 77 were granted and sales effected, 38 were refused or abandoned by the applicants, and 85 were pending at the end of the year. The sums realized from this source during the year and paid into the Treasury amounted to $25,431.87.

FREE USE OF TIMBER IN FOREST RESERVES.—Applications received during the year for free use of timber in forest reserves numbered 1,322, being more than four and one-half times the number received during the preceding year. There were approved by the Department 70 such applications and by the local forest officers 1,289.

MISCELLANEOUS PRIVILEGES IN FOREST RESERVES.—Under this head are included the construction of wagon roads, establishing and conducting road houses, public stopping places, hotels, stores, and the privilege of hay cutting, etc. Such applications were received to the number of 82, being nearly double the number received during the year previous. Twelve were pending at the beginning of the year. These 94 applications are accounted for as follows: Allowed, 47; rejected, 28; awaiting final action, 19.

The applications received included 26 for authority to establish hotels, summer resorts, road houses, etc.; 19 for authority to cut hay; 13 to build wagon roads, and 13 for stores; also a number for various other privileges.

SELECTIONS IN LIEU OF PRIVATE LANDS IN FOREST RESERVES.—In my last annual report I called attention to the fact that the abuses still existing under the act of June 4, 1897 (30 Stat. L., 34–36), authorizing the selection of vacant public lands outside of forest reserves in lieu of those within the limits of forest reserves held in private ownership and relinquished to the Government, was the chief obstacle to the extension of the forest-reserve system, and I renewed my recommendation for the enactment of legislation along the lines suggested by this Department.

I still adhere to the opinion there expressed, that in my judgment such legislation is absolutely essential to correct the abuses in regard to such lieu selections, and I here renew the recommendation there made, that such legislation be passed.

During the past fiscal year 1,200 applications for selections of lands in lieu of holdings within forest reserves and 7 applications based upon unperfected homestead entries and settlement claims, as provided by the act of June 4, 1897, have been received, involving, in the first class, of perfected title an aggregate area of 230,674.70 acres, and in the second 1,097.65 acres. The applications approved during the past year embrace 69,703.06 acres and those rejected 32,355.98 acres.

KIOWA, COMANCHE, AND APACHE LANDS IN OKLAHOMA TERRITORY.—The details of the opening of these lands and of the sales of town lots in Anadarko, Hobart, and Lawton, the county seats of Caddo, Kiowa, and Comanche counties, respectively, were fully set forth in my last annual report. The net amounts derived from said town-lot sales were as follows: At Anadarko, $186,910.47; at Hobart, $130,936; at Lawton, $412,355.38. Expenditures have been made, as authorized by the act of March 3, 1901 (31 Stat. L., 1093–1094), for various public improvements and for expenses actually necessary to the maintenance of the several county governments, up to and including October 18, 1902, as follows: From the Anadarko fund, $21,891.31; from the Hobart fund, $23,122.52, and from the Lawton fund, $21,387.36.

In accordance with the provisions of the Presidential proclamation of July 4, 1901, eleven other town sites were reserved, ten of which have been entered by the proper officer in trust for the occupants thereof. There have also been a number of commutations of homestead entries for town-site purposes, and other town-site entries have been made under the provisions of sections 2387 to 2389, United States Revised Statutes.

SAN FRANCISCO MOUNTAINS FOREST RESERVE, ARIZONA.—In my report for the fiscal year ended June 30, 1901, I adverted to the fact that for the past two years I had been endeavoring to reach some arrangement with the owners of the odd-numbered sections adjoining the San Francisco Mountains Forest Reserves, in Arizona, that would enable me to recommend to the President such action as would effect the consolidation of these reserves.

During the past fiscal year such arrangements were reached with the owners of the odd-numbered sections within the exterior limits of said reserves, relative to the exchange of their holdings for public lands elsewhere, as resulted in the proclamation of the President dated April 12, 1902, consolidating said reserves so as to include the odd-numbered sections adjoining them, within the limits of the San Francisco Mountains Forest Reserve, created by said proclamation.

IRRIGATION: OPERATIONS UNDER THE RECLAMATION ACT OF JUNE 17, 1902. In your first message to Congress you state that—

> In the arid region it is water, not land, which measures production. The western half of the United States would sustain a population greater than that of our whole country to-day if the waters that now run to waste were saved and used for irrigation.

As a result of the strong presentation of the importance of water storage, Congress passed the act, which was signed by you on June 17, 1902, setting aside the proceeds of the public lands for the construction of works of reclamation in the thirteen States and three Territories which form the western half of the country.

The amount of money thus set aside in the Treasury amounts to

over $8,000,000. The work is to be carried on under the direction of the Secretary of the Interior. The surveys, examinations, and making of recommendations have been intrusted to the Geological Survey, whose Director and leading men have spent the greater part of their lives in the arid West studying the problems, measuring the rivers, and preparing estimates of the extent to which arid lands might ultimately be reclaimed.

On the day following the passage of the act plans were submitted by the Director of the Geological Survey for putting it into effect; and these being approved by me, survey parties were at once put in the field to obtain all of the facts concerning the feasibility of various projects.

The act in itself is general, leaving to administrative action most of the details; so that the ultimate success of this great undertaking may be said to rest wholly with the men in charge. They can not shift this responsibility by laying any blame for nonsuccess upon Congress. With this responsibility resting upon them, great care is being exercised in selecting the projects which will be of the greatest benefit to the country; which will settle upon the land the greatest number of people; and which will return to the Treasury the cost of the undertaking, keeping intact the fund for new works. No considerations of expediency or sentiment can be tolerated, but only those of making the working a success from a business standpoint.

The same caution is exercised in selecting men to carry out details. They are chosen by competitive examination through the civil service, and are impressed with the fact that in their selection and subsequent advancement ability and merit alone are considered. Most of the men thus obtained are from the arid West, and have spent their professional lives in the surveying and construction of irrigation works.

It is not considered wise to attempt much at the outset, but to proceed as rapidly as possible consistent with knowing fully the work to be undertaken and the men to carry it on, so that no mistake may be made jeopardizing the future.

For further remarks on this subject, attention is called to that part of this report under the head of "The Geological Survey," page 69.

THE CEDED CHIPPEWA LANDS IN MINNESOTA.

These lands embraced originally about 3,000,000 acres, and constitute the finest body of pine lands east of the Rocky Mountains.

In order to dispose of them for the benefit of the Indians the act of January 14, 1889 (25 Stat. L., 642), was passed. Under that act about 660,000 acres have been disposed of, for which there has been received, approximately, $1,126,830.18.

In my last two annual reports I adverted to the fact that the experience of this Department in the administration of that act had demonstrated its inadequacy to accomplish the purposes intended.

Said act provided, in brief, that after the cession of the lands they should be examined and classified as "agricultural" lands and "pine" lands. The pine lands were to be estimated and appraised, and sold, after advertisement, at public auction to the highest bidder, and the agricultural lands were to be opened to disposition under the homestead laws, at $1.25 per acre.

It was soon discovered that the classification of the land was faulty, in that lands were frequently classified as agricultural that were as a matter of fact pine lands, and that the estimated quantity and value of pine on a given tract was frequently very much in excess of that set forth in the reports of the appraisers.

Soon after these discoveries were made, and in order to relieve the situation, the act of June 7, 1897 (30 Stat. L., 99), was passed, authorizing the sale of the dead and down timber on said lands. As soon became apparent, this was the most convenient vehicle for fraud that had yet been furnished those who were seeking to despoil the Indians, and on March 1, 1899, Congress passed an act (30 Stat. L., 929) under authority of which I, on March 30, 1899, directed the Commissioner of the General Land Office to suspend until further notice as to said lands all estimating, appraising, examining, selling and cutting of timber, the letting of further logging contracts, under said act of June 7, 1897, as well as the sale of said lands.

I also appointed two inspectors of the Indian Office to investigate the frauds reported to have been committed under the dead and down act. The result of their investigation was the discovery that, in round numbers, 12,000,000 feet of green timber had been unlawfully cut under dead and down contracts, and over 8,000,000 feet cut without authority on individual allotments. They collected from the parties so offending, without resorting to legal proceedings, over $55,000. Against one firm, which made repeated efforts to compromise for less than the value of the timber, a judgment of $93,560.60 was finally obtained.

During the summer of 1900, representations were made to the Department by the Senators and Representatives in Congress from Minnesota that it would be to the interest of the Indians that the pine lands in the four ceded townships in the White Earth Reservation in said State be sold and the agricultural lands opened for disposition under the homestead laws.

I accordingly referred the matter to the Commissioners, respectively, of the General Land Office and of Indian Affairs, and upon receipt of their reports that no practical objection existed to the disposition of said lands as provided for under said act of January 14, 1889, and the

amendment thereto of February 26, 1896 (29 Stat. L., 17), I, on October 6, 1900, directed that the pine lands in said four townships be offered for sale on November 27, 1900, and that the agricultural lands be opened for disposition under the homestead law on December 4, 1900; and the order of March 30, 1899, suspending all proceedings in relation to said lands, was modified accordingly.

On November 27 the sale of said ceded lands occurred as ordered. Soon thereafter, authentic and reliable information having reached the Department that the bidders at said sale had colluded and conspired to keep down the price of the lands, I directed the Commissioner of the General Land Office not to approve any of the purchases made at said sale nor to issue any patent thereon until further advised by this Department.

Subsequently in several cases I directed that where purchasers came forward and showed that they had made their purchases in good faith, and had paid a reasonable price for the land, and were not parties to any collusion or conspiracy to keep down the price, said order would be modified, the purchases would be approved and patents ordered issued thereon; such has since been my known attitude regarding the purchases made at said sale, but, notwithstanding that fact, only a few of the purchasers at said sale have come forward and submitted proof as required to enable them to obtain patent to the land.

To correct the evils and abuses outlined above, and to furnish a law that would adequately protect the rights of the Indians and obtain for them the value of their property, the act of June 27, 1902 (Public—No. 175), was passed. Its points of superiority over the old act of January 14, 1889, are substantially as follows:

1. The timber and not the land is to be sold, and then only after advertisement for six months in the leading cities of the country and on sealed bids, which will, it is believed, effectually prevent the collusion of purchasers to keep down the price.

2. After the timber is removed, the lands become agricultural in character, and are to be disposed of under the homestead laws at $1.25 per acre.

3. The labor in cutting is to be obtained from the Indians as far as possible, and not a stick of timber is to be removed until it has been cut, banked, and scaled where cut as per Scribner's rules, and the quantity as per scale paid for at the bid price per 1,000 feet.

It will thus be seen that every foot of timber cut must be paid for before it is removed, and the Indian must receive the full value of his timber and the price fixed by law for his agricultural lands.

Another feature of the bill is the reservation of 200,000 acres of said land for a forest reserve, to be placed under the control of the Forester of the Agricultural Department; but the points upon which the Department and Congress rely to prevent collusion and fraud and to

obtain for the Indians the full value of their property are those outlined above.

Rules and regulations under this act, with blank forms of bid, agreement, and bond, have been prepared, and sealed bids for the sale of the timber on the examined lands in sections 16 and 36 of the Red Lake Reservation and of the four ceded townships of the White Earth Reservation will be opened at the Crookston land office on March 2, 1903. The timber and débris must be removed before July 1, 1904, when the land will be subject to homestead entry under the acts cited.

The examination of the ceded Chippewa lands will be resumed as soon as a sufficient corps of examiners has been appointed. When said lands have been examined and classified, and the Indian allotments completed, the agricultural lands will be opened to settlement and entry. After the timber and débris have been removed from the pine lands, these will also be opened to settlement and entry, except as to the portion selected as "forestry lands."

INDIAN AFFAIRS.

The total Indian population of the United States is approximately 269,306, of which the New York Indians and those known as the Five Civilized Tribes embrace 89,732, leaving 179,574, occupying 156 reservations, having 55,127,000 acres, outside of New York and the Indian Territory.

During the past year 6,568 allotments were made, the area thereof being approximately 750,000 acres. Allotments in severalty, embracing in the aggregate 8,612,000 acres, have been made since the passage of the act of February 8, 1887 (24 Stat. L., 388), to approximately 71,421 Indians.

The general condition of the Indians has been fairly satisfactory during the year; no serious trouble has occurred. Progress toward civilization has been marked, more Indians having engaged in civilized pursuits and in efforts at self-support than ever before.

The management of the Indian service in the field and in the schools has been satisfactory. The policy of requiring Indian allottees able to do so, to work a fair portion of their allotments, thus contributing by their industry to their own support, has been adopted, as well as the discontinuance of the issue of rations to those determined and known to be able to support themselves; but extending to those entirely or partially disqualified every possible aid for their well-being and encouragement, and the inauguration of industrial training in schools where not previously established, so that Indians of both sexes might be taught the trades or industries best adapted to their circumstances.

The New York Indians are located on eight small reservations, having an area of about 88,000 acres, in the northwestern part of New York. They number about 5,232, to some of whom small sums of money and annuities are distributed under treaty stipulations. The Cherokees, Chickasaws, Choctaws, Creeks, and Seminoles comprise the Five Civilized Tribes in Indian Territory. They are estimated to number, including freedmen, about 84,500. The lands controlled by said tribes aggregate about 19,475,614 acres. Non citizen whites numbering about 300,000 are said to be living within the boundaries of the said tribes. Two thousand two hundred and eleven allotments to members of the Seminole tribe were made during the year, making a total of 4,053 allotments to them, thus practically completing their allotments. It is reported that about 6,000 deeds of allotments among the Creeks have been written, and are now ready for the signature of the principal chief of the Creek Nation.

Indians to the number of 1,560 were employed during the year in the agency and field service as harness makers, shoemakers, blacksmiths, herders, butchers, teamsters, police, and in kindred occupations, to whom salaries were paid aggregating $319,810, and in the Indian school service 627 Indians were employed as nurses, matrons, clerks, cooks, laundresses, and industrial and other teachers, salaries amounting to $243,083 being paid to them.

FINANCIAL.

APPROPRIATIONS.—The aggregate appropriations on account of Indian service for the fiscal year ending June 30, 1902, was $9,815,190.09. Of this amount $9,736,186.09 was provided for in the Indian appropriation act for the fiscal year 1902, approved March 3, 1901, and $79,004 by the deficiency acts of February 14 and July 1, 1902. The amount appropriated for the fiscal year ending June 30, 1903, is $9,132,028.10, being a decrease for 1903 from 1902 of $683,161.99, and the items of difference between 1902 and 1903 are as follows:

Increase:		
Fulfilling treaty stipulations		$19,531.60
Support of schools		279,966.00
Miscellaneous support		117,000.00
Miscellaneous		32,972.41
Capitalization of annuities		844,968.00
Total		1,294,438.01
Decrease:		
Current and contingent expenses	$52,600.00	
Payment for lands	1,925,000.00	
		1,977,600.00
Net decrease		683,161.99

The different objects of appropriation for the Indian service for the years 1902 and 1903, respectively, are shown in the following table:

	1902.	1903.
Current and contingent expenses	$760,240.00	$707,640.00
Fulfilling treaty stipulations	2,229,846.09	2,249,377.69
Miscellaneous supports, gratuities	628,000.00	745,000.00
Incidental expenses	93,400.00	93,400.00
Support of schools	3,251,254.00	3,531,220.00
Miscellaneous	773,050.00	806,022.41
Payment for lands	1,925,000.00	.....
Capitalization of annuities	154,400.00	999,368.00
Total	9,815,190.09	9,132,028.00

Decrease for 1903 from 1902, $683,161.99.

EXPENDITURES.—The following sums were expended on account of the Indian service for the fiscal year ending June 30, 1902, from moneys appropriated, from trust funds, including principal and interest, and from grazing moneys, in all aggregating $10,049,584.86, viz:

Current and contingent expenses	$647,039.71
Fulfilling treaty stipulations	1,841,935.80
Miscellaneous support, gratuities	539,920.42
Trust fund	2,126,154.01
Incidental expenses	76,842.87
Support of schools	2,837,785.14
Miscellaneous	1,979,906.91
Total	10,049,584.86

INCOME.—The income of the various Indian tribes from all sources during the year is as follows: Interest on trust funds, $1,510,248.16; treaty and agreement obligations, $2,234,610.26; gratuities, $727,960; Indian moneys, proceeds of leases, labor, etc., $946,347.93; aggregating $5,419,106.35, as against $5,338,880.54 for the previous fiscal year—an increase of $80,225.81, due principally to greater income from proceeds of labor, leases, etc.

EDUCATION.

The education of Indian youth in Government schools progressed satisfactorily during the current fiscal year.

There were 25 nonreservation schools (the same as last year); 90 reservation, as against 88 last year, and 134 day (4 less than last year)—making a total of 249 schools operated during the year, as against 251 the previous year, having a total average attendance of 20,540, an increase of 1,030.

Besides those in the Government schools, 3,580 were provided for in mission, boarding, and day schools, the Normal and Agricultural Institute at Hampton, Va., and in public schools in different sections of the country, being an excess of 13 over the previous year.

IMPROVEMENTS TO SCHOOL PLANTS.—Improvements to school plants have been made during the fiscal year ending June 30, 1902, at the Crow Agency, Mont.; Fort Bidwell School, California; Fort Lapwai, Idaho; Fort Shaw, Mont.; Fort Yuma, Ariz.; Riverside, Okla.; Lac du Flambeau, Wis.; Mescalero, N. Mex.; Navajo, N. Mex.; Winnebago, Nebr.; Kaw, Okla.; Pima, Ariz.; Pawnee, Okla.; Pottawatomie, Kans.; Rice Station, Ariz.; Absentee Shawnee, Okla.; Seneca, Ind. T.; Siletz, Oreg.; Uintah, Utah; Umatilla, Oreg.; Warm Springs, Oreg.; Western Shoshone, Nev.; Shawnee, Okla.; Yankton, S. Dak.; Fort Berthold, N. Dak.; Cheyenne River, S. Dak.; Cheyenne and Arapaho, Okla.; Standing Rock, N. Dak., and White Earth, Minn.

A new plant has been contracted for the Moqui School, located near Keams' Canyon, Ariz., at a cost of $70,000, which will furnish accommodations for 150 to 175 pupils.

CUTTING OFF RATIONS TO INDIANS.

In my last annual report it was shown that some 1,600 Indians had been dropped from the ration rolls during the previous year. Since then others have been dropped, so that the total now numbers over 12,000, all of whom are wholly self-supporting. Instead of rations and clothing, employment has been given them on reservations in building roads, dams, reservoirs for storage of water for irrigation, and other occupations suitable to their conditions.

Thus a beginning at self-support has been made by a respectable number who never worked before, and while progress will doubtless be slow, yet the example of these will eventually have good effect.

In connection with work by Indians of the character above described, especially in those cases where rations had been discontinued, a coupon-book method of trading was inaugurated at one of the agencies as a part of the policy under which able-bodied Indians are given employment at fixed daily wages in lieu of rations, being deemed a necessary expedient as a means of affording them an opportunity to obtain necessary provisions before they could draw their pay, which would not be until the end of each month. None of the Indians had funds with which to supply themselves and families with necessaries to take the place of the rations cut off; so it was absolutely essential for carrying out the scheme to put Indians to work to devise a method by which they could maintain themselves until they could draw their pay for work done.

The system referred to has enabled any Indian, as soon as he had earned two, three, five, or more dollars, to go to the agent with his time report and get a coupon book on any trader he might choose for the amount due him, and then go to the trader to whom the value of the book is charged by the agent and trade on it the same as with cash. In this manner the Indian has been able to supply his needs

pending pay day, when the amount earned by him in the meantime became due and payable, less the sum advanced in coupons, to be deducted by the agent and paid to the trader, thus liquidating the Indian's indebtedness with the latter.

As far as tried the system has worked admirably, and with satisfaction to the Indians using the coupon books, and will be given a trial at other agencies where the Indians are engaged as those at the agency referred to.

AGRICULTURE ON INDIAN RESERVATIONS.

One of the four special inspectors for this Department, provided by the act of April 28, 1902 (32 Stat. L., 156), was assigned to duty to investigate the agricultural conditions at the various Indian agencies and schools, and on July 7, last, Mr. Levi Chubbuck, the appointee in question, was advised that his investigations should embrace the following features:

1. The general topographical and physical characteristics of the country comprising the agency or school tracts visited.

2. Character of soil; its adaptability to agriculture or grazing; if suitable for the former, its fertility and probable degree of productiveness.

3. The extent, kind, and success or otherwise of farming operations carried or attempted at such agency or school.

4. The attitude of the Indians in the matter of farming pursuits, and the extent to which they are aided and encouraged by officers and employees in the Indian service.

5. The degree of knowledge of their duties possessed by farmers and assistants and industrial teachers where farmers are not employed, and the value of the services performed by such employees; whether their duties and their manner of performing the same are such as to encourage the Indians to engage in farming pursuits where conditions are otherwise favorable.

6. And, finally, any other points which your experience and judgment may dictate.

Mr. Chubbuck immediately left for the Indian country, and has since been constantly engaged at various reservations in North and South Dakota and Oklahoma—having so far visited and reported upon the agricultural conditions and needs of five reservations.

With the practical advice of Mr. Chubbuck, given on the spot, it is expected that great good will grow out of these investigations, and that renewed interest will be evinced in agricultural pursuits by many of the Indians, now that the Department has made it evident to them that they are expected to acquire arts of industry, and aid in their own support.

As further showing the importance of the appointment of an inspector to look after farming operations of Indians on their reser-

vations and at schools, attention is called to the following summary of such operations, full details of which will be found in the annual report of the Commissioner of Indian Affairs for the fiscal year 1901:

Cultivated during the year by Indians	acres	363,184
Broken during the year by Indians	do	28,641
Land under fence	do	1,289,689
Fence built during the year	rods	189,975
Crops raised during the year by Indians:		
Wheat	bushels	935,870
Oats and barley	do	737,986
Corn	do	668,994
Vegetables	do	441,931
Flax	do	20,387
Hay	tons	289,335

Also, as illustrative of the advancement of Indians in civilized pursuits, the following statistics are given from the same report, showing the results of their labor during the year and the amount of stock owned by them:

Miscellaneous products of Indian labor:		
Butter made	pounds	118,554
Lumber sawed	feet	5,716,000
Timber marketed	do	141,850,000
Wood cut	cords	91,184
Freight transported by Indians with their own teams	pounds	21,857,000
Amount earned by such freighting		$92,770
Value of products of Indian labor sold by Indians:		
To the Government		$436,307
Otherwise		$1,490,185
Roads made by Indians	miles	264
Roads repaired by Indians	do	1,363
Labor expended by Indians on roads	days	18,168
Stock owned by Indians:		
Horses, mules, and burros		343,300
Cattle		253,819
Swine		50,365
Sheep		567,941
Goats		90,913
Domestic fowls		254,285

ALLOTMENTS AND PATENTS.

ALLOTMENTS ON RESERVATIONS. During the year 352 allotments to the Chippewas of Lake Superior on the Bad River Reservation, Wis., were approved, embracing approximately 28,160 acres.

Schedules of 709 other allotments have been received at the Indian Office, but no action has been taken thereon.

PATENTS.—During the year 7,305 patents were issued and delivered to Indians of various reservations in Nebraska, Oklahoma, and South Dakota.

CROW RESERVATION, MONT.—The work of allotment to the Crow Indians, which was resumed during the past fiscal year, has been continued.

Allotments were also continued during a portion of the year on the Cheyenne River and Rosebud reservations, S. Dak. Work in the field was, however, suspended before the end of the year, owing to a lack of funds to carry it on.

NONRESERVATION ALLOTMENTS.—The work of revising allotments in the Redding and Susanville land districts, California, has been continued. Allotment work under the fourth section of the general allotment act of February 8, 1887, and the amendatory acts is still being carried on in Oregon and Washington. No allotments to nonreservation Indians have been approved or trust patents issued for such allotments during the period of this report.

As was the case last year, a number of allotments made on the Sioux ceded lands in South Dakota under section 13 of the Sioux act of March 2, 1889 (25 Stat. L., 888), have been relinquished and accepted, the Indians returning to the diminished reservations whereon are located the tribes to which they belong, where they will receive other allotments if found entitled thereto.

LEASING OF INDIAN LANDS.—The subject of leasing Indian allotments was very fully considered in my last annual report, and amended rules and regulations to govern such leases under the various acts of Congress (full details of which were set out in said report), were approved March 21, 1902, and the same are now in force.

Three thousand nine hundred and ten leases were approved by the Department during the year, and 588 executed during that period are pending in the Indian office.

LEASING TRIBAL OR UNALLOTTED LANDS.

During the year 87 leases have been made and 182 permits granted for grazing, agricultural, and mining purposes, from which an approximate income, exclusive of the royalty on the mining leases, of $270,717.35 will be derived for the year, full details of which are set out in the report of the Commissioner of Indian Affairs.

There was derived from leasing privileges on the Kiowa, etc., reservations, under temporary permits, from April 1, 1901, to April 1, 1902, the sum of $69,661.04.

Early in the present calendar year it was determined to lease reserve pastures numbers 1 and 4 belonging to the Apaches, Kiowas, and Comanches, for grazing purposes and number 3 for agricultural purposes, number 2 having been reserved for the common use of the Indians. Advertisements inviting proposals for the privileges alluded to were authorized, and in response bids were received and awards

made and leases executed covering 16 tracts within said pastures 1 and 4 and 22 within pasture 3, at an annual rental of $124,974.59, or an excess of $55,313.55 over the previous year, thus demonstrating the advantage of leasing upon competitive bids over the non competitive or informal method previously in vogue.

The estimated income from the Kiowa, etc., pastures from April 1, 1902, to July 1, 1903, is $164,833.25.

The rates per acre derived from said grazing leases is from 25 to 43½ cents, and from 40 to 50 cents for the agricultural lands.

The average rate derived for 427,557 acres during the year ending April 1, 1902, was about 10 cents per acre, the annual rental amounting to $42,641.52. These 427,557 acres were controlled last year by six lessees, while under the new system practically the same acreage is under lease to ten firms and individuals at an annual rental of $119,499.49, showing an increased income thereon of nearly $77,000 as the result of substituting the sealed bid and competition for the permit system.

LOGGING ON INDIAN RESERVATIONS.

La Pointe Agency, Wis.—Logging operations on the Lac du Flambeau and Bad River Reservations have progressed satisfactorily, but the operations on these reservations have not been extended or enlarged by the approval of new contracts.

The act of February 12, 1901 (31 Stat. L., 785), authorized the Indians of the Grand Portage Reservation to sell the timber from their allotments. Rules for cutting the same were formulated and approved, and operations thereunder are understood to have been satisfactorily conducted.

Menominee Reservation, Wis.—Under Department authority, Menominee Indians were employed to conduct logging on their reservation for the season of 1901–2. A total of 15,000,000 feet of timber was cut and sold, on sealed bids, at $17.27 per thousand feet, the highest price ever received from timber cut on an Indian reservation.

Chippewa ceded lands and diminished reservations in Minnesota.—No timber operations have been carried on during the past year on the lands under the jurisdiction of the Leech Lake or White Earth agencies. The act of June 27, 1902 (32 Stat. L., 400), specifically repealed the clause of the Indian appropriation act of June 7, 1897 (30 Stat. L., 90), which authorized the Secretary of the Interior to permit the Indians of the diminished reservations in the State of Minnesota to dispose of the dead timber, standing or fallen, thereon; and likewise to permit the Indians of the ceded lands to dispose of such timber on the ceded lands.

The act of June 27, 1902, supra, places the estimating, appraising, and sale of timber on the ceded lands under the jurisdiction of the Commissioner of the General Land Office.

Timber was cut on the ceded lands under the provisions of the aforesaid act of 1897, including the season of 1900–1901, to the extent of $266,321.45 net, of which $72,060.07 was for green timber, leaving $194,261.38 as the value of the dead timber so cut, which amount will be paid per capita to the Chippewa Indians in the State of Minnesota, as provided by the said act of 1897. It is held that the $72,060.07 derived from the green timber aforesaid is not subject to distribution among said Indians, but that the same belongs to their permanent fund, and it will be deposited in the Treasury of the United States to the credit of that fund.

On the night of July 5, 1902, a large amount of timber on the Red Lake diminished reservation in Minnesota (estimated at 5,000,000 feet) was destroyed by cyclone.

Steps are being taken by the Department to save this timber by having the same cut and banked under the direction of the Indian agent in charge, by employing the Indians of the reservation to do the work, and to then dispose of it on sealed bids, after advertisement, to the highest bidder or bidders, for the benefit of the Indians of the reservation named.

IRRIGATION.—The work of irrigation on the several reservations reported last year has been continued. With an appropriation of $100,000 for irrigation, instead of one-half that amount, or less, the scope of the work was enlarged, and expenditures were possible on several reservations that otherwise would have been deferred.

The report of the Commissioner of Indian Affairs gives in detail the expenditures for irrigation during the year.

During the latter part of the past year the investigation of the irrigation systems and the planning of new systems on the several reservations was at a practical standstill, owing to the serious indisposition and subsequent resignation of the irrigation engineer.

Another engineer was appointed, who began work just after the commencement of the present fiscal year. Owing to the suspension of the several projects prior to his appointment, and pending his entry on duty, he has since been kept constantly in the field making necessary investigations of and plans for new work and extending that already begun.

As soon as possible the engineer will be located in this city, whence direction and supervision as to all irrigation matters will be given, the result of which will be taken up in the next annual report of the Department.

TELEPHONE AND TELEGRAPH LINES.—Permits have been granted to survey and locate routes for the construction of telephone lines over certain Indian reservations under the provisions of section 3 of the act of March 3, 1901 (31 Stat. L., 1083), which authorizes the Secretary of the Interior to grant right of way "for the construction, operation,

and maintenance of telephone and telegraph lines * * * through any Indian reservation, * * * through any lands reserved for an Indian agency or Indian school, * * * or through any lands which have been allotted in severalty to any individual Indian under any law or treaty, but which have not been conveyed to the allottee with full power of alienation," etc.

As in the case of railroads, many telephone and telegraph lines have been constructed, and are now in the course of construction in the Indian Territory, so that in that Territory there are 748 miles of constructed lines, and 600 miles under construction. But the rapidity thus displayed is not so marked in other sections.

RAILROADS ACROSS INDIAN LANDS.—Rights of way over Indian reservations and allotments and portions of the public domain in connection therewith have been granted to certain railway companies under the provisions of the act of March 3, 1875 (18 Stat. L., 482), and March 2, 1899 (30 Stat. L., 990), full details of which will be found in the report of the Commissioner of Indian Affairs.

No less than 1,774 miles of road have been constructed and are now in course of construction, in the Indian Territory alone, since July 1 1898, making altogether 2,943 miles of road in that Territory.

POWER LINES THROUGH INDIAN LANDS.—Authority has been granted two companies to make preliminary surveys for the location of power lines, under the provisions of an act of Congress approved February 15, 1901, authorizing the Secretary of the Interior to grant such permits—one through the Fort Hall Reservation, in Idaho, and the other through the Cœur d'Alene Reservation, Idaho.

COMMISSION TO THE FIVE CIVILIZED TRIBES.

Under section 16 of the Indian appropriation act of March 3, 1893 (27 Stat. L., 645), there was created by Congress a Commission, known as the Dawes Commission, vested with authority to negotiate agreements with the Choctaw, Chickasaw, Cherokee, Creek, and Seminole, commonly known as the Five Civilized Tribes, looking to the disintegration of the tribal governments and the abolition of communal holdings, preparatory to the creation of a State or States of the Union from the lands embraced in the territory of these tribes, aggregating nearly 20,000,000 acres. The Commission, as created, consisted of three members, appointed by the President, by and with the advice and consent of the Senate. It was contemplated that this commission should in their negotiations seek, first, the allotment of the lands of these tribes in severalty, or at least a sufficient quantity for the needs of each member; and, second, to procure the cession of any surplus lands to the United States.

It soon became evident, however, that in order to accomplish their

work it would be necessary for the Commission to make correct rolls of the members of the tribes entitled to lands in severalty, and subsequent legislation was enacted for that purpose, as hereinafter stated.

The Commission thus appointed at once proceeded to Indian Territory and acquainted the chiefs and leading members of these tribes of their presence and the nature of their instructions. There was found to exist among the several tribes a bitter sentiment against allotment in severalty, encouraged and stimulated to a high degree by those whose personal interests would be adversely affected by a change of régime. The Commission, however, unceasingly labored to instill a sentiment in favor of the negotiation of agreements and reached its first success on the 23d day of April, 1897, when the accredited representatives of the Choctaws and Chickasaws united with the Commission in the execution of an agreement looking to the allotment of their lands in severalty and other purposes, which agreement was ratified by Congress on June 28, 1898. On March 2, 1895, the membership of the Commission was increased to five. This number was subsequently, on July 1, 1898, reduced to four, where it still remains.

In addition to the duty of negotiating agreements, the Commission was empowered by the act of June 10, 1896 (28 Stat. L., 321), to determine questions of disputed membership in the several tribes. The membership at that time was estimated to be, approximately, 75,000. Owing to the value of this great estate, many persons whose right to membership was disputed were seeking admission, and reports indicated that the records of the several tribes were exceedingly inaccurate and unreliable. The Commission's authority was still further extended on June 28, 1898, it at that time having failed to secure agreements with the other tribes which met with the approval of both the tribes and of Congress. The most important duty enjoined upon it by this act was that of preparing correct rolls of citizens in each of the several nations, a work which was immediately entered upon and which has been vigorously prosecuted continuously since and which has reached proportions wholly unanticipated. The Commission's report for the year ended June 30, 1902, shows that agreements providing for allotment in severalty in all of the five nations have been made with the Creek, Cherokee, Choctaw, and Chickasaw nations, which were ratified by the act of June 30, 1902 (32 Stat. L., 500), as to the Creeks; by the act of July 1, 1902 (32 Stat. L., 716), as to the Cherokees; and by the act of July 1, 1902 (32 Stat. L., 641), as to the Choctaws and Chickasaws.

The Creeks ratified their agreement on July 26, 1902, the Cherokees ratified their agreement August 7, 1902, and the Choctaws and Chickasaws ratified their agreement on September 25, 1902. The supplementary agreement with the Choctaws and Chickasaws was especially desirable, because the agreement made with them in 1897 (sec.

29, act of June 28, 1898, 30 Stat. L., 495) proved to be inadequate and ambiguous. By these agreements one of the most vexatious questions which have arisen in this Department in many years is disposed of. The title to this territory, which by early treaties was vested in fee in the several tribes, may now be transferred to the individuals and the communal holdings terminated. These agreements, while not possessing that clearness in terms which legislation should have where such great interests are involved, are very satisfactory in the main, considering the contentions which had to be overcome and the concessions which it was found necessary to make. Under prior legislation it was found to be impracticable to allot the lands to the members, having regard solely to their value. The changes made in the subsequent agreements make it possible to give to each member a certain acreage of land according to the standard of value, and also his proportionate share of the tribal funds. Those who have been holding vast tracts of land will be compelled to relinquish all that in excess of the amount to which they are rightfully entitled.

The individualizing of the homes of the Indians will place the owners in a position to better support themselves and their families, will instill a spirit of patriotism and independence, and materially reduce crime. It will make possible the establishment and maintenance of better school and religious institutions; will result in the extension of railroads, the building of towns, and the immigration of white persons from the surrounding States, who will be enabled to lease lands from the citizens of the tribes and to purchase in a qualified way, subject to the approval of this Department. The entire territory of the five tribes has been classified under the supervision of the Commission; allotment has been completed in the Seminole Nation; and in the Creek Nation over 13,000 allotments, embracing in excess of 2,000,000 acres of land, have been made. The marketable timber has also been estimated preparatory to allotment, and, barring certain legal obstacles involving the determination of citizenship, the work may be aggressively executed. By the recently ratified agreements dates have been fixed for closing the rolls, after which the membership may not be decreased by deaths or increased by births and intermarriage. A very large portion of the rolls of the Creek Nation as made by the Commission has been submitted and approved by the Department, and there have also been disposed of in like manner many enrollment cases in the other tribes, including applications for identification as Mississippi Choctaws.

The work of this Commission is believed to be well systematized, and is being carried rapidly forward. Its report for the year ended June 30, 1902, which is appended hereto (p. 180, Exhibit H), sets forth in great detail the obstacles which are met and the progress which is being made.

INSPECTOR FOR THE INDIAN TERRITORY.

Mr. J. George Wright, United States Indian inspector, has been continued in the Indian Territory, with headquarters at Muskogee, under section 27 of the act of Congress approved June 28, 1898 (30 Stat. L., 495), known as the "Curtis Act."

He has general supervision over matters within the jurisdiction of the Department, except questions of citizenship and allotment and other matters committed to the Commission to the Five Civilized Tribes.

The inspector transmits the annual reports of the agent of the Union Agency, the superintendent of schools in the Indian Territory, and the several supervisors; the revenue inspector for the Creek, Cherokee, and Chickasaw Nations; the supervising engineer of town sites, and the mining trustees of the Choctaw and Chickasaw nations, which officials are under the general direction of the inspector and report to the Department through him.

There are no matters of any particular importance which have required the attention of the inspector in the Seminole Nation during the year, there being, however, one lease entered into between the Seminole Nation, with the consent of the allottee, and a company that desired to use stone from certain lands for the purpose of making lime.

As contemplated by the agreement with the Choctaw and Chickasaw nations, practically all of the coal and asphalt mining operations, which have heretofore been carried on under national contracts, are now under formal leases entered into by the mining trustees and approved by the Department, with good and sufficient bonds securing the performance of the stipulations of such leases, payment of royalties, etc. These leases have been made for a term of thirty years, with a royalty on coal of 8 cents per ton, mine run, and on asphalt 10 cents per ton on crude and 60 cents per ton for the refined material. But few leases have been made during the year except such as were in the nature of renewals of old national contracts, the policy of the Department being to discourage speculative applications.

The coal industry of the Indian Territory has steadily advanced and the output continues to increase, as noted from the following comparative statement:

	Tons.
July 1, 1898, to June 30, 1899	1,404,442
July 1, 1899, to June 30, 1900	1,900,127
July 1, 1900, to June 30, 1901	2,398,156
July 1, 1901, to June 30, 1902	2,735,365

The pending supplemental agreement with the Choctaws and Chickasaws, as ratified by Congress on July 1, 1902 (32 Stat. L., 641), and confirmed by the tribes at an election held September 25, 1902, pro-

hibits the making of any additional coal or asphalt lease after the final ratification thereof; therefore, immediately after the close of the fiscal year no further applications were received and all pending ones were rapidly passed upon.

The following table shows the coal and asphalt leases in effect in the Choctaw and Chickasaw nations on June 30, 1902:

Name.	Number.	Date of approval.
COAL.		
Choctaw, Oklahoma and Gulf Railroad Co	30	Mar. 1, 1899
John F. McMurray	8	Apr. 27, 1899
D. Edwards & Son	2	Aug. 22, 1899
Arkansas-McAlester Coal Co. (by transfer)	1	Do.
McAlester Coal Mining Co	2	Feb. 19, 1900
Choctaw Coal and Mining Co	3	May 4, 1900
Sans Bois Coal Co	2	June 25, 1900
William Busby	1	Sept. 6, 1900
Samples Coal and Mining Co	1	Oct. 4, 1900
McAlester-Galveston Coal Mining Co	1	Oct. 18, 1900
H. Newton McEvers	1	Do.
Degnan & McConnell	3	Nov. 16, 1900
Folsom-Morris Coal Mining Co	1	Nov. 22, 1900
Ozark Coal and Railway Co	1	Dec. 8, 1900
St. Louis-Galveston Coal and Mining Co	2	Jan. 14, 1901
Missouri, Kansas, and Texas Coal Co	1	Feb. 12, 1901
Osage Coal and Mining Co	7	May 7, 1901
Atoka Coal and Mining Co	7	Do.
Devlin-Wear Coal Co	1	June 17, 1901
Sans Bois Coal Co	4	Aug. 5, 1901
Arkansas-McAlester Coal Co	1	Oct. 1, 1901
Thomas H. Chambers	1	Dec. 9, 1901
Turkey Creek Coal Co	1	Mar. 18, 1902
Southwestern Coal and Improvement Co	10	Apr. 4, 1902
Essen Coal Co	1	Apr. 12, 1902
Bache & Denman	1	Apr. 22, 1902
Kansas and Texas Coal Co	4	June 13, 1902
Atoka Coal and Mining Co	1	Do.
Capital Coal and Mining Co	1	June 16, 1902
Hailey Coal and Mining Co	2	June 17, 1902
McDougall Co	1	June 18, 1902
Le Bosquet Coal and Mining Co	1	Do.
Total number coal leases in effect June 30, 1902	104	
ASPHALT.		
Brunswick Asphalt Co	1	Mar. 20, 1900
Elk Asphalt Co	1	May 3, 1900
Downard Asphalt Co	1	Oct. 18, 1900
M. & A. Schneider	1	Nov. 23, 1900
Tar Spring Asphalt Co	1	May 13, 1901
Choctaw Asphalt Co	1	Apr. 22, 1902
Total number asphalt leases in effect June 30, 1902	6	

At the close of the year there were 104 coal leases and 6 asphalt leases in effect. Of the ten companies referred to in the report for the

previous year as being operated under national contracts, all but four have since been granted formal leases. One of these four, the Caston Coal Company, abandoned its operations, while the applications of Messrs. Perona, Sarlls, and Perry Brothers for leases were still pending.

The amount of royalty from coal is reported to be $245,848.01, and from asphalt $1,513.35, or a total of $247,361.36.

A general settling up of all old accounts of back royalty was made during the year, which resulted in a collection of almost $20,000 from this source.

A comparative statement is given below showing the different amounts collected on account of coal and asphalt royalty for the previous years, as follows:

July 1, 1898, to June 30, 1899	$110,145.25
July 1, 1899, to June 30, 1900	138,486.40
July 1, 1900, to June 30, 1901	199,663.55
July 1, 1901, to June 30, 1902	247,361.36

But little progress has been made during the year in the operation of the asphalt mines in the Indian Territory. The lessees continue to prospect and experiment, but the results are unsatisfactory.

The agreement with the Creek Nation makes no provision for the leasing of mineral lands, and does not reserve any such land from allotment. It provides, however, that citizens can not dispose of their allotments within five years, except with the consent of the Secretary of the Interior; and as coal, oil, or other minerals in place are considered a part of the realty, the Department has held that Indian citizens can not mine coal or other mineral and dispose of the same without the consent of the Secretary. Under this ruling a few permits for Indians to continue mining where they had previously operated were granted, with the understanding that royalty was to be held to the credit of the land from which the coal was mined. The amount of money collected from this source during the year was $2,761.20.

No new applications for leases in the Cherokee Nation under section 13 of the Curtis Act have been received. Under certain informal permits granted by authority of the Department royalty has been collected on coal amounting to $5,339.57.

Under applications made in 1899, 12 leases were granted the Cherokee Oil and Gas Company, covering certain lands for the purpose of extracting oil and gas near Chelsea, in the Cherokee Nation. One lease for the same purpose was also granted The Cudahy Oil Company. They cover a period of 15 years, with a rate of royalty of 10 per centum of the value of all crude oil extracted, each lease being for 640 acres. They were granted in pursuance of the preference right given by section 13 of the Curtis Act to those who, or whose grantors, have under the customs and laws heretofore existing and prevailing

in the Cherokee Nation, obtained leases of land containing oil, taken possession thereof, made improvements and developed and produced oil in commercial quantities.

The town-site surveys have been pushed during the year with a view to early completion. The exterior limits of practically all towns having been established during the previous year, the work of making the interior surveys and plats has been under way.

The act of Congress approved May 31, 1900 (31 Stat. L., 221), only authorized the surveying and platting of towns having a population of 200 or more, and those towns set apart upon recommendation of the Dawes Commission; therefore the work during the year has been confined to such towns.

In the Choctaw Nation the work was practically completed, the report showing but 1 town yet to survey, and that was under progress, there being 33 of such towns. The report also shows 12 smaller or new towns along the lines of railroads where the tracts were set aside upon the recommendation of the Commission to the Five Civilized Tribes. The advices of these segregations were not received in time to commence the work prior to the close of the year.

In the Chickasaw Nation the work of the larger towns was completed with the exception of 7, and 2 of these were under way. There were also, as in the Choctaw Nation, 2 new town sites which were segregated just at the close of the year, and which are yet to be surveyed. Including these new town sites there are 56 towns shown by the report.

In the Creek Nation the report shows that all towns, including the smaller ones which were especially authorized by the agreement with that nation, have been surveyed—25 in all.

In the Cherokee Nation all towns having a population of 200 or more were completed with the exception of 2, and these were under way, there being altogether 30 of these towns.

The Indian appropriation act approved May 27, 1902 (32 Stat. L., 245), authorizes the surveying and platting of the small towns in the Cherokee, Choctaw, and Chickasaw nations. There are about 440 of these smaller towns and post-offices, but investigations that were made as to the conditions at each before the close of the year show that it will not be necessary to establish or survey town sites at more than 60 towns in the Chickasaw Nation, 25 in the Choctaw Nation, and 20 in the Cherokee Nation.

The work of appraising the town sites in the Creek, Choctaw, and Chickasaw nations has been carried on during the year by the commissions appointed for each nation, and the work has progressed satisfactorily, the same being nearly up with the surveys in the Choctaw and Creek nations, and about half done in the Chickasaw Nation.

No town-site commission was appointed for the Cherokee Nation

until after the close of the year; therefore, there were no appraisements made in that nation.

Attention is called to the manner of the issuance of deeds to town lots in the several nations, showing that full payments are being made and title passed to a number of these lots.

The same complications exist in the matter of the collection of the tribal revenues as during the previous year. The laws of the different nations attempt to fix and prescribe certain permit and other taxes to be assessed against noncitizens residing and doing business within the Indian Territory, but the only method of enforcing these tribal taxes, as a general rule, has been by the removal of the parties declining to pay, under the provisions of section 2149 of the Revised Statutes.

In the Creek and Cherokee nations these revenues have been entirely collected by this Department through the United States Indian agent at Union Agency.

The Choctaw and Chickasaw nations are permitted to collect their own revenues as prescribed by their own laws. The Chickasaw national legislature, however, at the close of the year placed the matter of the collection of their cattle taxes in the hands of the Department, and the revenue inspector for the Creek and Cherokee nations was also assigned to this duty. The amount collected from that source from June 21 to June 30, 1902, was $1,160.75.

The total amount of revenue collected from all sources in the Creek Nation during the past year was $17,196.79, showing a material decrease from the previous years. The total amount collected in the Cherokee Nation was $17,060.08.

The last Indian appropriation act, approved May 27, 1902, contains the following provision:

> That it shall hereafter be unlawful to remove or deport any person from the Indian Territory who is in lawful possession of any lot or parcels of land in any town or city in the Indian Territory which has been designated as a town site under existing laws and treaties; and no part of this appropriation shall be used for the deportation or removal of any such person from the Indian Territory.

In the matter of the schools in the Choctaw, Chickasaw, Creek, and Cherokee nations, attention is invited to the report of Superintendent John D. Benedict and the several supervisors, who discuss the details of the work in each nation. He reports that the past year has been by far the most successful of any since the Department assumed the supervisory control over the schools in the Territory, the tribal officials, almost without exception, working in harmony with the Federal officials in endeavoring to secure better educational facilities.

There are 5 boarding schools in the Choctaw Nation, 2 of which are orphan academies, 190 day schools, and a number of small neighborhood boarding schools; also several schools where Choctaw pupils reside in the limits of the Chickasaw Nation. The total enrollment of

all these Choctaw schools during the year was 4,788, at a total cost of $113,485.65.

The Chickasaw Nation has maintained 4 boarding schools, one of which is an orphan academy, and 16 day schools, with a total enrollment of 939 pupils, costing $84,257.85. The schools of the Chickasaw Nation are only partially under the control of the Federal authorities in the Territory, and the expenses of such schools have been exceptionally large, and the recommendation is therefore made that some radical changes concerning these schools be adopted.

In the Creek Nation the schools are jointly under control of the tribal superintendent and a Federal supervisor, both acting under rules and regulations prescribed by the Department. This nation has maintained 10 boarding schools, 7 for Indian children and 3 for freedmen or colored children, also 52 day schools. The total enrollment of these schools for the year has been 2,754, at a cost of $72,102.26.

In the Cherokee Nation the Government has only assumed the supervisory control over their schools, the school supervisor, acting under the direction of the superintendent, inspecting the schools, assisting in the examination of teachers, and passing upon and approving warrants issued by the principal chief in the payment of expenses of such schools. The new agreement, ratified since the close of the year, provides for joint control of the Cherokee schools in the same manner as in the Creek Nation. There have been 4 boarding schools in the Cherokee Nation during the year, 1 being an orphan academy and 1 a colored high school, also 140 day schools; all having a total enrollment of 5,383 pupils, maintained at a total cost of $98,054.

Attention is called to the important provisions of the supplemental agreements with the Creek, Choctaw, and Chickasaw nations, and the act of Congress approved July 1, 1902, providing for the disposition of matters in the Cherokee Nation.

A list of timber contracts entered into in accordance with the provisions of the act of June 6, 1900 (31 Stat. L., 660), is submitted, showing 12 of these contracts in effect during the year, all being for timber to be used in railroad construction or the operation of mines.

The total amount of funds received by the United States Indian agent for the credit of the several tribes is shown by the following statement to be $595,093.94, an increase of $308,579.92 in the collections over the previous year.

Choctaw and Chickasaw:		
Coal and asphalt	$247,361.36	
Town lots	157,188.83	
Timber and stone	74,516.37	
		$479,066.56
Chickasaw:		
Cattle tax		1,160.75

Creek:		
Coal royalty	$2,761.20	
Merchandise	5,317.08	
Occupation	3,049.44	
Pasture and cattle revenues	5,087.25	
Sale of court-house	981.82	
Town lots	80,536.56	
		$97,733.35
Cherokee:		
Merchandise	$3,375.68	
Coal royalty	5,339.57	
Hay royalty	7,422.31	
Timber	461.00	
Gravel	236.52	
Ferry charters	225.00	
		17,060.08
Sale of town-site plats		73.20
Total		595,093.94

The disbursements made by the United States Indian agent during the year amounted to $658,049.27, as shown by the following table:

Warrant payments:	
Creek	$130,890.13
Choctaw, general	485.70
Choctaw school certificates	188.10
Chickasaw	129,590.40
Cherokee	201,623.84
Schools, Choctaw	64,854.24
Expenses, town site	84,890.60
Smallpox	1,505.32
Creek indigents	5,249.50
Destitute Cherokees and expenses	13,751.32
Exchange	335.84
Office incidentals and miscellaneous	24,684.28
Total	658,049.27

Comparing the disbursements, as above shown, with those made for the previous year, it will be noted that there is an increase of $353,756.75.

Attention is invited to the regulations authorizing the issuance by municipal corporations of bonds for the purpose of constructing waterworks, schools, and other public improvements. The towns of Muskogee and Okmulgee voted bond issues of $175,000 and $20,000, respectively, which met the approval of the Department. The town of Checotah also provided for the issuance of bonds for school purposes the sum of $10,000, which was not finally passed upon at the close of the year. The town of Wagoner provided $100,000 for waterworks and $15,000 for schools, but before the matter was finally disposed of Congress passed the act of May 19, 1902, which provided that the judge of the United States court for the judicial district in which the municipality is located should pass upon such bonds, taking it out of the hands of the Department.

Reference is made to the new railroad legislation in the act of Congress approved February 28, 1902 (32 Stat. L., 43), authorizing roads to take and condemn lands in any town sites or allotments or other lands in the Indian Territory.

In February, 1902, reports having been made as to the destitute condition of certain Cherokee Indians, a payment of certain sums from their tribal funds was made to relieve these Indians, aggregating $13,067.

Under section 8 of the Creek agreement the Indian agent has, under the supervision of the Indian inspector, taken steps to place Creek allottees in unrestricted possession of their allotments and remove parties objectionable to them.

Attention is called to the provision in the supplemental agreement with the Choctaw and Chickasaw nations relative to the reservation of 640 acres at the town of Sulphur in the Chickasaw Nation, to include the mineral springs located at that point.

In conclusion it is stated that the complicated condition of affairs in the Indian Territory will necessarily continue until the present work of allotting lands and disposing of town lots is completed, and the various tribal governments with their laws are extinguished.

The greatest need of the Territory at this time is educational facilities for noncitizens.

In view of the recent supplemental agreements with the several tribes, which have had the careful consideration of the Department before being submitted to and ratified by the last session of Congress, no recommendations for additional legislation are made at this time, the work to be performed being to carry out the provisions of these agreements. Attention, however, is called to the urgent need for some provision to be made requiring deeds, mortgages, etc., to be recorded.

The bill introduced at the last session of Congress, providing for the protection and preservation of game in the Indian Territory, failed to become a law. Such a law is needed and desired by all, and it is therefore respectfully recommended that the matter be again submitted for the consideration of Congress.

The official relations of the inspector during the year with the numerous Federal officials of the Indian Territory, as well as with the executives of the Five Civilized Tribes, have been particularly harmonious and pleasant.

AGREEMENTS WITH INDIANS.

Kansas Tribe of Indians.—An agreement among themselves was made by this tribe early in the year providing for a pro rata division of their tribal lands and funds, and the same was ratified by act of Congress approved July 1, 1902 (32 Stat. L., 636).

Fort Berthold Reservation, N. Dak.—An agreement with the Arikara, Grosventre, and Mandan of the above reservation was

made by an inspector of the Department June 25, 1902, by which 208,000 acres of land were ceded to the United States, in consideration of $260,000, to be paid to and expended for them in various beneficial ways.

This agreement will be submitted for the necessary action of Congress at its next session.

Agreements made with the Crows and the Yankton Sioux in 1899, and with the Sioux of the Devil's Lake Reservation; Indians of the Grande Ronde Reservation; the Lower Brulé Reservation; and the Rosebud Reservation, made in 1901, are pending before Congress.

Lands amounting to nearly one and three-quarters of a million acres are ceded by these pending agreements, all of them providing for large cessions, except that with the Yankton Sioux, by which the United States acquires title to the well-known red pipestone quarry in Minnesota.

It is hoped that favorable action will be taken in all these cases during the next session of Congress.

KLAMATH BOUNDARY CLAIM.—The agreement with these Indians in 1900, to compensate them for lands in dispute, is also pending before Congress.

YAKIMA BOUNDARY CLAIM.—The claim for compensation for lands excluded from the Yakima Reservation by alleged erroneous survey, involving some 293,837 acres, is still pending, the Indians having refused to negotiate with an Indian inspector who was sent there for the purpose during the past year.

Efforts will be made during the present year to bring about an arrangement with the Indians.

CONDITION OF INDIANS AND THEIR RESERVATIONS.—The investigation of "the condition of Indians upon reservations, their degree of civilization, the advisability of reducing the size of their reservations," etc., provided for by the act of March 3, 1901 (31 Stat. L., 1069), has been discontinued, owing to the lack of funds to carry on the work, no appropriation for the purpose for the current fiscal year having been made.

SALE OF INDIAN LANDS.

PEORIA AND MIAMI INDIANS.—Since my last annual report conveyances have been approved by the Department for 1,077.10 acres of Peoria lands, at a valuation of $14,606, and 60 acres of Miami lands, valued at $600.

CITIZEN POTTAWATOMIE AND ABSENTEE SHAWNEE LANDS.—Conveyances for 22,946.87 acres of Citizen Pottawatomie lands, having a value of $124,543.78, and for 5,268.74 acres of Absentee Shawnee lands, valued at $54,572.75, were approved by the Department during the same period.

INDIANS IN MICHIGAN. - Lands belonging to Indians in Michigan to the extent of 551 acres, valued at $3,586, were sold and conveyances therefor approved by the Department during the past year.

WYANDOT INDIAN LANDS, INDIAN TERRITORY.—Conveyances for 129.50 acres belonging to these Indians have been approved, valued at $2,362.50.

CHIPPEWA OF LAKE SUPERIOR, WISCONSIN.—Lands belonging to these Indians have been sold to the extent of 709.95 acres, valued at $3,759.60.

INHERITED LANDS.—By the act of May 27, 1902 (32 Statutes, 275), provision was made for the sale of allotments of deceased Indians, under certain conditions, subject to the approval of the Secretary of the Interior.

Rules prescribing the manner of sale have been prepared for the guidance of purchasers. No deeds have been approved. But some deeds for sales made before the establishment of the present rules, or before any rules at all were made, will be disapproved.

STOCKBRIDGE AND MUNSEE INDIANS, WISCONSIN. --The plan for the allotment of the common lands of these Indians which was submitted to Congress on February 1, 1901, with favorable recommendation and urgent request for speedy action, is still pending before that body. Attention was again called to the matter on January 4, 1902.

It is hoped that favorable action will be taken at the next session.

MISSION INDIANS ON WARNER'S RANCH.

By decree of the Supreme Court of the United States, these Indians were rendered homeless, and steps became necessary to provide homes for them. An Indian inspector was detailed to proceed to the Mission Agency for the purpose of selecting a tract, either on the public domain or to be obtained by purchase from private parties, upon which to locate them.

A number of places were visited and examined by him, and the inspector recommended the purchase of a tract known as the Monserrate ranch, as possessing greater advantages than any other offered, at a minimum cost ($70,000) to the Government, provided not more than 300 persons were to be cared for. As the Warner's ranch Indians numbered but 158 souls, the ranch recommended by the inspector was deemed a suitable location by the Department, and the purchase of the same was recommended to Congress. The matter was favorably acted upon by that body in the Indian appropriation act for the current fiscal year, and provision therein was also made for the appointment of an advisory committee of three, to aid in the selection of a tract for the use of said Indians and such others, not provided with suitable lands elsewhere, as the Secretary of the Interior might locate thereon.

A commission was duly appointed, consisting of Messrs. Charles F. Lummis, Russel C. Allen, and Charles L. Partridge, who reported July

23, 1902, the selection of the "Palá" proposition, covering 3,438 acres, at a cost of $46,250, and which was strongly recommended by them as the most suitable of all the lands visited by the commission.

This selection was duly approved by the Department on August 15, 1902, but as the deeds of conveyance have not been received, the transaction has not been closed.

Since then the commission has recommended the selection of several small tracts for the location of other Indians, in view of the fact that there remains a balance of the fund appropriated for the purpose; but the Department has decided that this can not be legally done, inasmuch as its powers are believed to have been exhausted when the purchase of the tract alluded to was made.

WENATCHIE INDIANS, WASHINGTON.—The removal of these Indians to the Colville Reservation was provided for by the Indian appropriation act of May 27, 1902 (32 Stat. L., 260), and the matter is under advisement.

NEW YORK INDIANS.—The work of ascertaining the beneficiaries of the judgment of the Court of Claims on the claim of said Indians for lands arising under the treaty of Buffalo Creek of January 15, 1838, is now being carried on in the office of Indian Affairs, and it is hoped that rolls of those entitled to share in the said judgment will soon be completed, so that payment of the claim may be made at the earliest practicable date.

CLAIMS OF TRADERS AGAINST OSAGE INDIANS.—Provision was made by act of Congress approved March 3, 1901, for the adjustment of the claims of reservation traders against the Osage Indians. A board was appointed by my direction on December 9, 1901, and examination made of the claims, 2,625 in all, presented by 26 traders and others, which showed the claimed indebtedness of the Indians to be $646,214.40, of which $139,669.43 was interest, leaving face value of the claims $506,544.97. (See House Doc. No. 643, Fifty-seventh Congress, first session.) Of the face of the claims $429,596.32 was allowed, deductions amounting to $216,618.08 being made for interest, discount for excess profits charged and certain improper charges in some of the claims, and for claims excluded as not within the class specified by the aforesaid act.

The act provided that the individual shares of the Indians of funds arising from grazing and excess or accumulated interest should be used in paying their indebtedness, and the claims of such individual debtors were paid in July, 1902, to the extent of $207,286.96, leaving $222,309.36 yet due the traders from certain individual members of the tribe.

Other payments are to be made "whenever pasture moneys and accumulations of interest other than regular annuities shall amount to the sum of $100,000."

The pasture moneys amount to something like $80,000 per annum. But as the per capita shares of this fund of the members of the tribe

can be used only to liquidate each individual's indebtedness, and as many of them are indebted for large sums, greater than their shares of said fund will amount to in a number of years, many years will elapse before final payment can be made.

I am of the opinion that steps should be taken to liquidate this indebtedness at an earlier date, in justice to the traders whose claims were adjusted practically upon a cash basis. To do this it seems to me that authority might be obtained from the Osages to nationalize these claims, and for their payment as a tribal debt out of the grazing fund, as fast as the same accumulates. In this way the whole indebtedness could be settled within the next two or three years.

INDIAN LANDS SET APART TO MISSIONARY SOCIETIES AND CHURCHES.—Fifteen tracts of land, from 1 acre to 164 acres in size, on 13 reservations, were set apart during the year for educational and religious work among the Indians.

PENSIONS.

The report of the Commissioner of Pensions shows that the total number of pensioners on the roll during the fiscal year ended June 30, 1902, was 1,041,687, and the number remaining on the roll at the close of the year was 999,446, a net gain over the previous year of 1,711, and exceeding in number of pensioners any former year.

The gains to the rolls during the year were 40,121 new pensioners and 3,831 renewals and restorations, a total of 43,952. The losses to the rolls during the year by death were 37,145, and from other causes 5,096, a total of 42,241, leaving a net gain of 1,711 for the year.

The pensioners on the roll June 30, 1902, are classified as follows, viz:

Widows and daughters of Revolutionary soldiers	8
Survivors and widows, war of 1812	1,318
Survivors and widows, Indian wars	4,223
Survivors and widows, Mexican war	14,845
General laws:	
Army invalids	277,965
Army widows, minor children, etc	87,046
Navy invalids	4,360
Navy widows, minor children, etc	2,263
Army nurses	634
Act of June 27, 1890:	
Army invalids	426,188
Army widows, minor children, etc	148,201
Navy invalids	15,953
Navy widows, minor children, etc	6,977
War with Spain:	
Army invalids	6,282
Army widows, minor children, etc	2,727
Navy invalids	329
Navy widows, minor children, etc	127
Total	999,446

The number of claims of all classes adjudicated during the year was 246,353, of which number 118,464 were rejected.

There were 10,441 claims allowed in which no benefit accrued to the claimants for the reason that they were already pensioned under another law at an equal or higher rate. No certificates issue in this class of cases unless the claimant elects to take such pension in lieu of that which he now receives.

Attention is directed to the fact that the number of rejections does not represent an equal number of separate claimants. Many of the rejections represent claimants who are drawing pensions under one law or another, while in other cases different and separate applications are often filed by a soldier claiming under different acts of Congress or by and through several separate attorneys.

The number of allowances in which certificates actually issued during the year was 117,268. Of these, 40,121 were original claims; 3,831 were restorations and renewals; 57,063 were increases, reissues, additionals, and supplementals, and 16,253 were for accrued pension.

The number of pending claims at the beginning of the year was 403,569, and the number of new claims filed during the year was 188,626; at its close there were pending 339,436 of all classes, of which 131,700 were original claims in which no allowance has ever been made.

The total number of males pensioned was 738,809; 288,936 on account of disability; 442,101 on account of service, and 7,732 old war survivors. The total number of females pensioned is 260,637; 92,171 by reason of death of the soldier of service origin; 155,178 on account of service of soldier; 12,654 on account of service of soldier in old wars, and 634 nurses. A detailed statement of these classes with the amounts disbursed for each during the last fiscal year is appended hereto, page 218. (Exhibit I.)

The appropriation for the payment of pensions for the fiscal year was $144,000,000. Repayments to the appropriation made the amount available for payment of pensions $144,004,351.56. The disbursements for army and navy pensions during the year, including the amount disbursed by Treasury settlements, were $137,504,267.99, leaving an unexpended balance to be covered into the Treasury of $6,500,083.57. The expenditure for navy pensions was $3,849,022.24.

The amount expended during the year for salaries and other expenses of the Pension Bureau, and the cost of disbursements, fees of examining surgeons, etc., was $3,586,160.04, making the total cost of maintenance of system $141,090,428.03.

The disbursements for pensions by the United States from July 1, 1790, to June 30, 1865 were $96,445,444.23. Since 1865 the disbursements for pensions were $2,804,408,857.22, and for cost of maintenance and expenses $91,654,717.92, or a total of $2,896,063,575.12, making

the entire cost of the maintenance of the pension system since the foundation of the Government nearly $3,000,000,000. Of the amount that has been expended for pensions since the foundation of the Government $70,000,000 was on account of the war of the Revolution; $45,025,297 on account of service in the war of 1812; $5,814,206 on account of service in the Indian wars (1832–1842); $31,861,337 on account of service in the Mexican war; $3,275,184 on account of the war with Spain, and $2,728,878,276 on account of the war of the rebellion.

The foregoing amounts are startling in character, yet they are the results of the disbursements made pursuant to the pension laws.

The annual value of the pension roll (the amount required annually to pay the regular pension certificates outstanding at the close of the fiscal year) was $132,152,800. The average annual value of each pension was $132.23, a slight increase over that of the former year. The average annual value of general law pensions has increased to $171.28; of pensions under act of June 27, 1890, to $108.59, while the average annual value of Spanish war pensions has decreased to $140.78. Over one-half of the pensions are $10 per month and under.

In 97,551 cases allowed there were first payments averaging $88.95 each, amounting to $8,677,548. Not unfrequently these first payments are over $1,000 and sometimes more when a case has been long pending.

A large increase is shown in the number of pensions and increase of pensions by special acts of Congress, the number being 1,114, causing an increase in the annual expenditures of $182,825. Since 1861 there have been granted by special acts of Congress 9,296 pensions, including increase of pension.

The number of attorneys on the roll June 30, 1902, was 20,718, and the amount paid as attorney fees during the year was $582,581. These fees are paid to attorneys direct by the United States from the pensioner's allowance, and attorneys are not permitted to collect fees from claimants.

Four thousand three hundred and fifty-five examining surgeons are employed to make medical examinations of claimants for pension, and the amount appropriated for their payment during the year was $700,000, of which $573,621 had been expended for the first nine months of the fiscal year. Most of the surgeons are organized into boards of three members each, while 188 designated specialists are distributed throughout the United States.

During the year 4 of the 18 pension agencies occupied leased quarters at a total annual rental of $9,480. All these agencies are operated by an aggregate force of 432 employees, the cost of maintenance of such agencies for the fiscal year being $526,413.67. In 1902 there were 10,300 pensioners under guardianship. Owing to the increase in the number of guardians and the labor and expense involved in

scrutinizing and passing upon the accounts of the guardians, it has been necessary to change the rule which heretofore prevailed, requiring guardians to make detailed reports of the items of expenditure concerning the estates of their wards. Hereafter guardianship accounts will not be required to be filed in the Bureau, but, at the option of the Commissioner, guardians will be required to file a certificate from the judge of the court appointing the guardian showing that he is still duly qualified and acting and has given and maintained proper bonds and made proper report and has complied with the laws of the State in which he resides.

During the year 196 arrests were made, 272 indictments found, and 167 convictions secured on account of violations of the pension laws. There were 24 acquitals; 23 cases were dismissed; 8 civil suits were instituted, and $11,418 recovered. The report shows that of the persons convicted only 22 are believed to have had any military service, and that some of the crimes that were punished were undoubtedly committed through ignorance.

The Commissioner recommends the passage of a law providing that any person convicted in court of an infamous crime shall forfeit his pension or his right to one. I fully concur in the Commissioner's recommendation in this matter; the pension roll is a roll of honor, and its high standard should be ever maintained.

Information was received at the Bureau of the death during the year of 50,128 old soldiers; of that number, however, only 27,043 were on the pension roll. It is estimated that the death rate among the pensioners for the present year will approximate 40,000, and the losses to the roll from other causes will probably equal 6,000. The Commissioner expresses the opinion, however, that owing to new legislation enacted by Congress the number on the pension roll at the end of the present year will exceed 1,000,000.

Substantial progress has been made in bringing up the arrears of work in the Bureau, 47,106 more applications having been handled than were received during the year; an excellent record of the industry of the clerks. In adverting to the condition of the force of his office, the Commissioner, in a supplement to his report, dated October 17, 1902, hereto appended, page 219 (Exhibit J), states, among other things, that there are many worthy employees therein who have served their country and are suffering from disability due both to war and advanced age. But a short time will elapse before there will be 500 persons of this class who will be practically incapacitated for the performance of the intricate and difficult duties devolving upon them in the adjudication of pension claims. This class, he states, should be taken care of; to discharge them in large numbers as soon as they become unserviceable would result in hardship and suffering, not only to the clerks but to their dependents. I concur in his views on the

subject and recommend that appropriate legislation be enacted by Congress for the retirement from duty of aged employees.

The act of August 7, 1882, provides that marriages shall be proven in pension cases to be legal marriages, according to the law of the place where the parties resided at the time of marriage or at the time when the right of pension accrued.

The effect of this law has been to deny claimants in many instances the status of legal widowhood, although the equities appear to be in favor of such claimants. I desire to reiterate the recommendation contained in previous reports, that Congress so amend the act as to provide for the admission of evidence to prove marriages for pensionable purposes by a standard which will be uniform throughout the entire jurisdiction of the United States.

The Commissioner calls attention to the many cases of widows who have married old soldiers after their names have been inscribed on the pension roll, and suggests the passage of a law prohibiting the granting of pensions to widows in such cases.

The present method of examining applicants for pension, the Commissioner states, is uncertain, expensive, and unsatisfactory in its results, the personnel of the various medical boards being liable to outside control and political dictation. Those who are to be examined for disabilities should appear before persons possessed of the highest degree of medical knowledge and skill, as pathological sequences of many diseases and disabilities are so obscure and remote that they can only be detected by careful examination conducted by physicians of learning and experience, and frequently of those having special facilities for microscopical examination of excretions, etc. As a substitute for the existing system he suggests a division of the country into districts or circuits; the appointment under civil-service rules of medical experts, to be organized into boards to serve outside of the States of their domiciles, and to go from place to place within their respective circuits on fixed days, making examinations and taking testimony regarding the condition of the applicants for pension. Such a system as outlined by the Commissioner is in the interest of the betterment of the service and has my approval.

The Commissioner calls attention to the advisability of the enactment of legislation providing for an authoritative, judicial determination of the pension laws, and favors the bill looking to that end reported by Senator Gallinger on the 20th of April, 1900. This subject was fully discussed in my last annual report, in which I stated:

> In the light of further experience, I beg to earnestly repeat the recommendation in my report of last year (pp. 62-63) that legislation be had providing for the adjudication by the Court of Claims and the Supreme Court of the United States of a limited number of test pension claims involving difficult and important questions of law, thereby establishing judicial precedents for the guidance of the Commissioner of Pensions and Secretary of the Interior. A careful study of the subject leads to

the conviction that the administration of the pension laws is essentially a matter for the executive department, and that it is impracticable to impose upon the judiciary any part of the investigation and disposition of these claims beyond the interpretation of the pension laws in such number of selected and test cases as will insure correct and uniform action by succeeding officers of the Pension Bureau. A bill (S. 4251) introduced by Senator Gallinger in the last Congress has received the approval of the Senate Committee on Pensions, and it is hoped it will be presented again at the next session and receive the favorable consideration of Congress. Exhibit K of the appendix to this report (pp. 220–223) sets forth this bill, the report of the Senate committee thereon, and certain amendments to the bill proposed by the Grand Army of the Republic committee on pensions.

Desiring to act in harmony with those who, by reason of their army service, might have suggestions and opinions to offer which are entitled to special consideration in connection with pension legislation, conferences were held in my office in January last with representatives of the Grand Army of the Republic, at which were present Messrs. Leo Rassieur, of Missouri, commander in chief; R. B. Brown, of Ohio, chairman of executive committee; John Palmer, of New York; J. W. Burst, of Illinois; Charles Clark Adams, of Massachusetts; O. H. Coulter, of Kansas, and A. G. Weissert, of Wisconsin, all members of the Grand Army of the Republic pension committee. The Assistant Secretary of the Interior, the Assistant Attorney-General of this Department, and the Commissioner of Pensions were also present to give the committee and myself any information or assistance which might be requested.

After discussing Senate bill 4251 and another one providing for a separate pension court, those present concurred in the opinion that some legislation along the line proposed in Senate bill 4251 was very desirable, and that the hope of securing it would be greatly enhanced if the Grand Army committee and the officers of this Department would come together upon some common ground and unitedly propose legislation believed by them to be fair alike to the Government and pension claimants. It was then arranged that the commander in chief of the Grand Army of the Republic, on behalf of the Grand Army committee, should go over Senate bill 4251 with the Assistant Secretary of the Interior and the Assistant Attorney-General and formulate, if possible, such amendments as would make the bill mutually acceptable to the Grand Army committee and this Department.

The bill was then gone over with the commander in chief, and such amendments as were suggested by him and insisted upon after discussion were assented to by this Department, and the bill, with these amendments incorporated therein (Exhibit K, pp. 220–223 of Appendix), was laid before the Grand Army committee by the commander in chief. Subsequently, Mr. Weissert, of the committee, informed me that, upon full consideration, the committee assented to Senate bill 4251 as thus amended, and authorized me to say that it was acceptable to them, but that, owing to a resolution adopted by the Grand Army of the Republic at its then last annual encampment, calling for the creation of a separate pension court, the committee was not at liberty to give the bill their formal approval.

In previous annual reports the desirability of the enactment by Congress of a law providing for the payment of a specific fee to attorneys in claims under the act of March 3, 1899 (30 Stat. L., 1379), for division of pension, as well as in claims for accrued pension, was adverted to. In discussing the necessity for legislation of this character I stated:

The act of July 4, 1884 (23 Stat. L., 98), and the supplementary acts of March 19, 1886 (24 Stat. L., 5), June 27, 1890 (26 Stat. L., 182), March 3, 1891 (26 Stat. L.,

1081), and August 5, 1892 (27 Stat. L., 348), contain provisions regulating the compensation of attorneys and agents for "services in prosecuting a claim for pension," and, subject to certain specified restrictions, clothe the Commissioner of Pensions with a supervision over the allowance of such compensation and direct that, when "such pension * * * claim shall be allowed," such compensation shall be paid by the Commissioner of Pensions directly to the attorney or agent out of the pension money. The manifest purpose of this legislation is to protect pension claimants from unreasonable charges on the part of attorneys and agents engaged in securing the allowance of their claims.

This legislation is, however, limited to regulating compensation for "services in prosecuting a claim for pension," and does not extend to compensation for services rendered in other pension proceedings which do not in themselves constitute the prosecution of "a claim for pension." This has been sharply called to the attention of the Department in different ways. One of these is in connection with the administration of section 4766 of the Revised Statutes and the amendatory act of March 3, 1899 (30 Stat L., 1379). This section, as amended, relates to the payment of pension money after the claim has been allowed, but has nothing to do with the allowance of the claim itself. It provides for enforcing a division or distribution between a pensioner and his wife or children, in certain enumerated contingencies, of the money accruing upon his pension.

The granting of an application by a wife or children for the division or distribution of such pension money is not the allowance of a pension; does not require the issuance of a pension certificate; will not increase the amount of moneys to be paid by the Government under the pension laws, and will not make the wife or children pensioners. The husband or father, as the case may be, will still be the pensioner, will still hold the pension certificate, and when the contingency which gives rise for the divided payment of the pension money ceases he will be entitled to receive all moneys thereafter accruing upon his pension.

These applications by wives and children are not, therefore, claims for pension within the meaning of the legislation regulating the compensation of attorneys and agents for services in prosecuting claims for pensions, but are only requests for the divided payment of the moneys accruing upon a pension, the claim for which has theretofore been successfully prosecuted to allowance by the husband or father. Such applications are nevertheless proceedings under the pension laws in which the beneficiaries should receive the same protection against unreasonable charges on the part of attorneys and agents as are otherwise accorded to pension claimants and pensioners. Indeed, the wives or children intended to be benefited by the act of March 3, 1899, are usually less able to protect themselves against such unreasonable charges than are most of the pension claimants who are accorded full protection by the act of July 4, 1884, and the acts supplementary thereto.

Another instance in which it has been shown that the existing legislation regulating the compensation of attorneys and agents is not broad enough occurs in the administration of section 4718 of the Revised Statutes, which provides that where the pensioner or pension claimant dies the accrued pension money shall be paid to the widow or children, if there be such, and if not, shall be paid by way of reimbursement to "the person who bore the expenses of the last sickness and burial of the decedent in cases where he did not leave sufficient assets to meet such expenses." In the United States district court for the western district of Pennsylvania, in the case of United States *v.* Nicewonger (20 Fed. Rep., 438), it was held that an application for the payment of accrued pension money, as directed in this section, was not a claim for pension within the meaning of the acts regulating the compensation of attorneys and agents.

That Congress has the power to fix the fees of attorneys and agents for services in securing the allowance of a pension, or in procuring the payment, division, or dis-

tribution of any pension money, is fully established by the case of Frisbie *v.* United States (157 U. S., 160, 166), but in the absence of such legislation by Congress, or in those instances which are not covered by Congressional legislation, attorneys and agents may demand and receive from the claimants or applicants such compensation for their services as may be agreed upon. This is shown by the opinion of Mr. Justice Brewer in United States *v.* Kock (21 Fed. Rep., 873), where it is said:

"In the absence of a statute prohibiting it, any man may contract for his services. He is not bound to render them; and, rendering them, he may charge the person seeking those services such fee as they may agree upon."

Under these circumstances, I earnestly recommend that the existing legislation regulating the compensation of attorneys and agents for services in pension matters be so amended as to provide that no compensation whatever shall be paid to them, directly or indirectly, for any service in connection with any claim or proceeding under the pension laws, except such as may, within certain limits fixed by Congress, be allowed by the Commissioner of Pensions and paid from the pension money, as now provided with respect to "claims for pension."

Experience in the administration of the pension laws during the past year has further demonstrated the necessity for the enactment of the remedial legislation desired, and I accordingly renew my recommendation in the matter.

The disbursements by years, on account of pensions, and the expenses incident to the execution of the pension laws, together with the number on the pension rolls each year since July 1, 1865, is shown in the following table:

Statement showing disbursements for pensions, fees for examining surgeons, cost of disbursement, salaries, and other expenses of the Pension Bureau, and the number of pensioners on the rolls each year since July 1, 1865.

Fiscal year.	Disbursements for pensions.		Fees of examining surgeons.	Cost of disbursement, maintaining pension agencies.	Pension Bureau.		Number of pensioners on rolls.
	Army.	Navy.			Salaries.	Other expenses.	
1866	$15,158,598.64	$291,951.24		a $155,000.00	$237,165.00	$15,000.00	126,722
1867	20,552,948.47	231,841.22		a 155,000.00	308,361.49	27,615.86	155,474
1868	22,841,183.75	290,325.61		a 155,000.00	366,186.20	31,834.14	169,643
1869	28,108,329.34	344,923.93		a 155,000.00	366,007.31	43,519.50	187,963
1870	29,043,237.00	308,251.78		216,212.86	333,660.00	51,125.00	198,686
1871	28,081,542.11	467,250.21		431,720.03	372,378.97	58,980.00	207,495
1872	29,276,921.02	475,825.79		457,379.51	436,315.71	57,557.78	232,189
1873	26,502,528.96	479,534.93		456,323.99	456,021.26	90,855.39	238,411
1874	29,603,159.24	603,619.75		447,693.17	414,052.24	75,048.72	236,241
1875	28,727,104.76	543,300.00		444,074.79	464,821.21	73,799.35	234,821
1876	27,411,309.53	521,900.00		447,702.13	468,577.80	98,798.88	232,137
1877	27,659,161.72	523,360.00	$66,824.42	455,270.05	445,262.08	67,102.78	232,104
1878	26,251,725.91	534,283.53	234,968.26	313,194.37	443,096.56	41,240.90	223,998
1879	33,109,339.92	555,089.00	86,538.50	203,851.24	493,255.70	54,088.70	242,755
1880	55,901,670.42	787,558.66	75,547.00	221,926.76	582,517.84	55,935.68	250,802
1881	49,419,905.35	1,163,500.00	116,757.00	222,295.00	686,565.45	46,162.19	268,830
1882	53,328,192.05	984,980.00	232,595.87	231,544.37	868,113.92	130,981.85	285,697
1883	59,468,610.70	968,963.11	341,186.49	285,620.29	1,723,285.68	241,555.83	303,658
1884	56,945,115.25	967,272.22	262,066.32	303,430.61	1,936,161.65	333,522.42	322,756
1885	64,222,275.34	949,661.78	482,181.13	275,976.55	2,122,926.54	511,492.12	345,125
1886	63,034,642.90	1,056,500.00	492,714.76	294,724.14	1,948,285.80	509,291.91	365,783
1887	72,464,236.69	1,288,760.39	1,106,324.92	248,280.42	1,968,599.66	430,195.91	406,007
1888	77,712,789.27	1,237,712.40	845,143.61	263,199.87	1,986,027.55	420,776.24	452,557
1889	86,996,502.15	1,846,218.43	787,391.72	278,902.20	1,978,119.98	422,554.50	489,725
1890	103,809,250.39	2,285,000.00	895,677.62	292,697.35	1,957,725.43	380,281.73	537,944
1891	114,744,750.83	2,567,939.67	1,640,993.76	580,360.14	2,301,721.80	377,560.74	676,160
1892	135,914,611.76	3,479,535.35	1,725,597.47	500,122.02	2,494,122.87	178,823.44	876,068
1893	156,045,460.94	3,861,177.00	1,657,628.30	519,292.95	2,460,044.50	230,768.67	966,012
1894	136,495,965.61	3,490,760.56	672,678.50	517,430.37	2,403,522.75	370,344.69	969,544
1895	136,156,808.35	3,650,980.43	807,767.33	563,449.86	2,461,890.50	504,912.52	970,524
1896	134,632,175.88	3,582,999.10	672,587.47	565,027.85	2,258,959.35	494,800.94	970,678
1897	136,313,914.64	3,635,802.71	678,395.44	572,439.41	2,262,597.70	474,350.52	976,014
1898	140,924,348.71	3,727,531.09	894,249.08	536,629.84	2,254,181.49	429,031.14	993,714
1899	134,671,258.68	3,683,794.27	1,007,636.76	522,496.49	2,151,578.85	465,805.63	991,519
1900	134,700,507.24	3,761,533.41	747,497.80	522,812.16	2,135,542.55	435,854.23	993,529
1901	134,743,790.81	3,787,693.03	844,262.60	525,892.94	2,118,993.20	379,646.70	997,735
1902	133,655,215.75	3,849,022.24	814,470.82	526,418.67	2,114,153.75	376,340.72	999,446
Total	2,741,659,504.38	62,719,352.84	18,189,662.95	13,667,297.40	50,810,800.25	8,986,957.32	

a Approximate.

The disbursement of $376,340.72 on account of "other expenses" o Pension Bureau includes $65,021.46 for stationery, printing, and binding, repairs to Pension building, and contingent expenses. The statement of years prior to 1899 does not include these items. The disbursement on account of army and navy pensions from July 1, 1790, to June 30, 1865, is $96,445,444.23.

PENSION APPEALS.

The report of the Assistant Secretary shows that at the commencement of the fiscal year, July 1, 1901, there were pending 16,520 appeals and motions for reconsideration.

During the fiscal year ended June 30, 1902, there were filed 8,677 appeals and motions, and there were finally disposed of 9,100 cases, leaving 16,097 pending appeals and motions at the close of the fiscal year.

Upon receipt of the report of the Commissioner of Pensions that he had receded from his former adverse action and would allow the contentions of appellants, 970 pending appeals and motions were dismissed during the year. This action was taken in the interest of claimants, as it permitted a more prompt allowance without delaying the consideration of the appeals in the regular order of filing.

Deducting the dismissals, final decisions were rendered in 8,130 cases, of which in 865 cases the action of the Bureau was reversed, or a fraction over 10 per cent.

In addition to the foregoing, 539 cases on appeal were returned to the Bureau of Pensions for further action and an additional report.

This was found necessary for the reason that upon a careful investigation of the merits of the claim on appeal, a special examination was deemed essential in order to arrive at a just and satisfactory conclusion upon the issue presented, or because, for various reasons, the claim had not been properly adjudicated. The labor and time expended upon this class of claims does not appear in the number affirmed or reversed, as final action on the appeals in all such cases has not been taken.

The issues presented in the appeals are diverse in character, involving nearly all legal and medical questions possible to arise under the numerous pension laws. From careful observation it may safely be concluded that at least 75 per cent of the appeals arise from the adverse action taken on medical grounds.

This demonstrates the necessity for a better method of securing competent medical examination of pensioners than now exists. It can be effectuated by the establishment of pension examining boards under civil-service rules, as recommended on page 58 of this report.

A critical examination of all the evidence bearing upon the issue presented on appeal is uniformly made to the end that exact justice may be done to interested parties and that there may be a final disposition of the claim without the intervention of a motion for reconsideration.

Volume XII of Departmental Decisions in Appealed Pension and Bounty Land Claims has been completed and is in the hands of the Public Printer for binding. It has an elaborate and well-prepared index, which will render it valuable as a book of reference.

PATENT OFFICE.

The report of the Commissioner of Patents on the business of the Patent Office for the fiscal year ended June 30, 1902, shows that there were received during that year 45,562 applications for mechanical patents, 1,807 applications for designs, 139 applications for reissues, 1,849 caveats, 2,460 applications for trade-marks, 1,020 applications for labels, and 270 applications for prints. There were 27,287 patents granted, including reissues and designs, and 1,864 trade-marks, 750 labels, and 163 prints were registered. The number of patents that expired was 20,335. The number of allowed applications which were, by operation of law, forfeited for nonpayment of the final fees was 4,123. The total receipts of the office were $1,491,538.85, the total expenditures were $1,329,924.63, and the surplus of receipts over expenditures—being the amount turned into the Treasury—was $161,614.22. The volume of work shown by the Commissioner's report is greater than ever before in the history of the office, the total number of applications filed having for the first time exceeded 50,000.

The Commissioner calls attention to the fact that the design-patent law, section 4929, Revised Statutes, was amended upon the 9th day of May, 1902, which amendment has had the effect to reduce the number of applications for design patents by the elimination of those cases which were purely mechanical. Attention is also called to the revision of section 4883, Revised Statutes, which, as amended, permits patents to be issued without the necessity for the signature of the Assistant Secretary of the Interior, as heretofore.

The Commissioner calls attention to the installation of the scientific library of the Patent Office in new quarters and to the necessity for an increase in the appropriation devoted to the purchase of books for this library, pointing out that after the payment of the cost of transportation of publications of patents to foreign governments and the purchase of periodicals and serials only about $700 per year remains for the purchase of scientific literature, which sum he states is insufficient for the purposes of the library, and he asks that this sum be increased to $4,000 per year, including the above-mentioned items.

He calls attention to the reduction of complaints of losses of money as compared with the preceding year, the percentage for the latter period being but 1⅓ of those of the earlier.

The Commissioner mentions the increase of examiners provided at the last session of Congress, and expresses the hope that the present force will be able to take care of the business of the office. He refers to the progress of classification and the value of this work, and mentions the extension of the publication of decisions controlling the practice before the Patent Office to avoid the necessity of citing manu-

script opinions. He suggests the necessity for more room, stating that it would result in a saving of time and of valuable documents and in more economical methods of work.

THE GEOLOGICAL SURVEY.

Plans for the work of the Geological Survey, comprising the geologic, topographic, hydrographic and irrigation, forestry, publication and administrative branches, were approved by me on April 25, 1901. Plans for work in Alaska were approved earlier, on January 5 and March 28, in order that the departure of parties assigned to investigations in that remote region might not be delayed until the complete plans could be perfected. The following report of the results accomplished indicates the scope and leading features of the plan as approved.

GEOLOGIC BRANCH.—In view of the increasing burden of administrative duties devolving upon the Director, it became necessary during the year to create a new office, that of geologist in charge of geology. The duties of this office, which had previously, in a measure, been performed by the assistant in geology to the Director, are purely administrative and comprise all matters of that character relating to geology and paleontology. Another administrative change was the appointment of a geologist in charge of work in Alaska, which had previously been under the direction of a committee. With these exceptions the organization of the geologic branch remains as heretofore, the direction of the scientific work being in the hands of eight geologists in charge. This form of organization has proved even more efficient during the past year than when first established, securing desirable coordination among the various lines of work pursued, improving the effectiveness of the force, and raising the standard of publications.

Fifty-two geologic and five paleontologic parties operated in the United States, including Alaska. The work continued along lines which previous experience had demonstrated to be productive of the best results. As the work of the Survey becomes more widely known there is a rapidly growing demand for its extension into new regions. Since, other things being equal, the greatest benefits will result from the work where it is most highly appreciated, local demands are generally given much weight in planning the Survey operations. These demands, however, far exceed the ability of the Survey, with its present appropriation, and many meritorious requests have necessarily to be postponed. With the rapid development of the mining industry and its growing appreciation of the value of exact geologic information, the work of the Survey is becoming each year more largely economic in its character. Only a very small part of the geologic, paleontologic, and chemical force is employed upon investigations

which do not have a direct practical bearing on the development of the mineral resources of the country. The increasing attention given to economic geology has developed in the Survey a body of highly trained experts, and the Survey finds increasing difficulty in retaining the services of the best men in competition with mining companies, which pay much higher salaries for the same service.

The geologic work may be broadly classed under two heads—investigations of areal geology, which have in view the preparation of the Geologic Atlas of the United States, and investigations of the economic mineral deposits of particular districts or of particular minerals wherever occurring throughout the entire country. The former furnishes the foundation on which the prospector, mining engineer, and economic geologist work, and the latter gives the needed accurate information concerning specific districts and mineral deposits on which the legitimate development of the mining industry is based. The work of both classes has been well distributed throughout the United States, and no important region has been entirely neglected.

The rapid increase in the mineral production of Alaska has led to many demands for investigations and surveys in that Territory. With the present appropriation of $60,000, it is impossible to meet all these demands, for this amount is only adequate to put four or, at most, five parties in the field. During the season of 1901–2 four parties were actively engaged in survey and exploratory work in Alaska. The plans for these investigations were carried out practically as outlined in the last report. Two parties made important surveys in the vast unexplored region north of the Yukon. Reconnoissances were made from the Koyukuk to both the north Arctic coast by way of the Colville River and to Kotzebue Sound by way of the Kowak River. In the Seward Peninsula another party made a geologic and topographic reconnoissance of an area of some 5,000 square miles, which led to important conclusions in regard to the distribution of the gold placers. In southeastern Alaska a preliminary geologic investigation was made of the Ketchikan mining district, which promises to become an important producer of gold, silver, and copper. The results of this work have been submitted in four reports, which are in print or will soon go to press.

The field work planned and begun for the season of 1902 contemplated the completion of the mapping of the Copper River Basin. As this region promises to become an important mineral producer, containing both gold and copper, it seemed advisable to complete the preliminary mapping during one season, and two parties were organized for this purpose. The first section of the Copper River parties began in March the work of transporting the season's supplies from the coast to the interior. The other members of the parties started some two months later and the actual surveys were begun about the 1st of June.

An important exploration was also undertaken of the Mount McKinley region of central Alaska. This region embraces the largest unexplored area south of the Yukon, as well as the highest peak on the continent, and hence an exploratory survey was deemed advisable. The expedition organized for this purpose left the coast at Cook Inlet on the 2d of June. It is hoped that it will be able to extend its operations to the Yukon River, and that the results will throw considerable light on the great Alaskan range, of which Mount McKinley is the highest peak. A fourth party was organized with the view of investigating the coal resources of the Yukon, which are becoming important, as the accessible timber is being rapidly exhausted. This party took the field about the 1st of June, and was instructed to study the Yukon section from the international boundary to Bering Sea. To meet the demand for more detailed investigations a topographic survey was undertaken of the Juneau mining district with the view of preparing a base map for future geologic work.

TOPOGRAPHIC BRANCH.—The standard detailed topographic mapping was completed during the year for 31,793 square miles, distributed through 30 States and Territories, thus making, to April 30, 1902, a total of 895,675 square miles mapped. The area of the country being 3,021,880 square miles, the completed portion is a little over 29 per cent of the whole. In connection with this mapping and as a basis therefor, 213 primary triangulation stations were occupied and their geodetic positions computed. There were run 2,002 miles of primary traverse, upon which many geodetic positions were determined and marked; and 16,782 miles of careful spirit levels were run, and 1,560 permanent metal bench marks were established to indicate elevation above mean sea level. The boundary survey between the United States and Canada was extended through the Rocky Mountains for 42 linear miles, and 117 miles of the boundary of the Bighorn Reserve, in Wyoming, were surveyed and marked. In Alaska, topographic mapping was completed over an area of 4,950 square miles. The office work of the year resulted in the final drafting of 108 standard atlas sheets.

EXAMINATION AND SURVEY OF FOREST RESERVES. In the forest reserves the examination of the timber and the topographic mapping were continued and 6,345 square miles were mapped. Examinations were made of the forests of the Cascade Range Forest Reserve of Oregon, and of portions of the San Francisco Mountain Reserve and the Grand Canyon Reserve of Arizona. As during the previous season, a specialist was detailed for the examination of the forests of the southern Appalachian region; and the mountain region of North Carolina, together with portions of adjacent States, was completed.

During the winter, reports on these examinations were prepared and are now in process of publication.

DIVISION OF HYDROGRAPHY.—Unusual interest is attached to the operations of the division of hydrography in ascertaining the water resources of the United States. This is particularly the case in the western half of the country, where the fact that water is the mineral which gives value to the greater part of the land is universally recognized. The development of the material resources of the West is dependent in larger degree upon knowledge of the limitations and fluctuations of the water than upon knowledge of any other one substance. It is not from the West alone, however, that inquiries have come concerning the quantity and quality of water supply for industrial purposes. In the more crowded East, where the larger rivers cross State lines, there are innumerable questions arising concerning the diversion of water for municipal and other purposes, and the returning to the streams of polluted effluents from manufactories, and of sewage from cities. The operations, therefore, of the hydrographic branch of the Survey have an interest to a wide range of citizens, not only from the standpoint of commerce and industry, but also from that of public health.

Popular interest in the matter has been reflected in the action of Congress, which in the last annual appropriation bill increased from $100,000 to $200,000 the amount available for gauging streams and determining the water supply; and the law was also so modified that the investigation of artesian wells can now be carried on in all parts of the United States, and not be limited to the arid and semiarid sections. A more far-reaching action has also been taken by Congress in the recognition of irrigation as a matter of national importance, by the passage of the reclamation law approved June 17, 1902. The work preliminary to putting this law into effect has been assigned to the engineers who have been employed in the investigations carried on by the division of hydrography.

In the northeastern part of the United States additional river stations have been established, particularly in Maine, where the development of water power is taking place rapidly. There has also been carried on in New York State cooperation with both the State and the city governments. Aid has also been rendered by the State of Maryland and assistance has been had from citizens of other States.

In the southeastern part of the country special interest has attached to the measurement of the flow of the streams issuing from the Appalachian mountain area, particularly from the portion where it is proposed to establish a national park or forest reserve. The destructive floods which have come from a portion of the denuded area have afforded an object lesson on the importance of the regulation of these streams for the protection of the lowlands and for their full utilization as sources of power.

In the central part of the country, embracing the great drainage

basins of the Ohio and Mississippi rivers, where for the most part the ground is too level for the existence of water power, considerable interest attaches to stream measurements for the reason that they afford indications of the best way to guard against floods, but more particularly for the reason that they bear on the question of water pollution. The rapidly increasing population and the development of manufacturing industries, the effluents from which are discharged into the sluggish rivers, bring about questions many of which are interstate in character and which can be solved only through a full knowledge of the situation. The development of artesian wells is also a matter that is attracting considerable public attention throughout the greater part of these broad valleys.

In the West, as above stated, the water question is one of vital interest. There is no one item which is discussed both publicly and privately with greater zeal than that of irrigation and its possibilities. The division of hydrography is endeavoring to extend as rapidly as possible its work in the measurement of the streams and the investigation of the artesian conditions of the drier parts of the country, and under increased appropriations has already greatly extended its operations and improved the quality of results. The time for merely accumulating data has at length passed, and with the definite object of the reclamation of arid lands in immediate view, it is now possible to proceed with these investigations with increased energy and effectiveness.

IRRIGATION.

In preceding reports considerable space has been devoted to the importance of the investigation of irrigation, and emphasis has been laid upon the necessity of not merely acquiring facts, but of doing something toward utilizing the great opportunities presented by the unoccupied public lands. In particular it has been stated that—

> There is no one question now before the people of the United States of greater importance than the conservation of the water supply and the reclamation of the arid lands of the West and their settlement by men who will actually build homes and create communities.

When this was written the most sanguine would hardly have believed it possible that within a few months it would be in the power of the Department to actually begin upon the great problem of reclaiming the public lands and putting them in the hands of homeseekers. Events have, however, moved with great rapidity, and the ceaseless efforts of men interested in the reclamation of the arid lands have culminated in the passage of the reclamation law referred to on page 26 of this report.

This law puts into the hands of the Secretary of the Interior extraordinary powers and heavy responsibility. It creates a fund to be expended by him in the construction of irrigation works which are to

be paid for by the settlers and which pass ultimately into their control. The law is very general and leaves to the judgment of the Secretary many important matters, upon each of which wise decision is essential to the ultimate success of the work. Great caution is therefore necessary in taking the preliminary steps, and especially in creating precedents, which, if not carefully considered, may result in injury to the country.

It has been considered wise at the outset not to create a separate bureau with new officers and untried regulations, but to permit the steady growth and extension of the work which may be considered as having been initiated in 1888 under Maj. J. W. Powell, the former Director of the Geological Survey. Great credit should be assigned to this far-seeing and fearless scientist, who through his mature life urged in public and before Congress the importance of the national work of reclamation. The work which was begun under his direction fourteen years ago, after passing through many vicissitudes, has, by a process of evolution, become the hydrographic investigation of the United States. The engineers starting as young men in this work have gained a broad education and experience, particularly in Western or arid lands, and many of them, between intervals of service for the Government, have been concerned in the planning and construction of irrigation works. Taking, therefore, this body of men as a nucleus, and with the guidance of the well-tested rules and regulations of the Geological Survey, an engineering corps has been formed, designated the Reclamation Service, this being, for administrative purposes, a branch of the Geological Survey.

The data already at hand concerning the amount of water available, the location of reservoir sites, and the altitude and area of catchment basins have proved invaluable in beginning the work of reclamation. These facts have been collected by the men now constituting the Reclamation Service, are familiar to them, and enable practical work to be begun at once, leading up to the construction of definite plans and specifications for reservoirs and main-line canals.

Although there is thus available a great mass of information concerning the arid lands and the opportunities of reclaiming these, yet when it comes to definitely recommending any project great caution must be exercised, and consequent delay, especially with the first works. Few persons appreciate the difficulties inseparably connected with successful hydraulic construction.

The construction of water-storage and irrigation works of magnitude is in many respects still a matter of experiment. In nearly every part of the country where large works have been completed they have offered to their builders a series of surprises. Even though carefully planned, one part or another has had to be replaced or changed. In Government works such as those contemplated by the reclamation act

it is of prime importance that all of the designs should be considered with unusual care, so that errors may be avoided and the confidence of the people in the finished work be fully justified.

The intense public interest in the carrying out of the irrigation law results in a proper desire to see something accomplished as soon as possible. This is voiced by the current expression that the people wish to see the water running over the dams before another season passes. There is no one more desirous than the Secretary of the Interior and his assistants of bringing about such a condition: but it is far more important that the water should be running over well-constructed works for an indefinite number of years than through the ruins of a single failure.

To plan and supervise the building of the works the best engineering talent of the country should be secured. Such men can not easily be had. Their services are in demand by corporations, and their compensation is notably high. On the other hand, there is a great body of unemployed persons who are ambitious to take up the work, and who are using every effort to get connected with it. To sift out from the body of applicants those who may have proper education and qualifications, and especially to attract the men of known experience and ability, is no easy task. At the outset it has been determined to enforce strictly the civil-service rules, and to appoint engineers and assistants to the various positions only after competitive examination, one which tests not merely book learning, but practical experience and ability in accomplishing results. From time to time new men certified by the Civil Service Commission have been appointed in the reclamation service, and this engineering corps is growing as rapidly as prudence will permit. The best physical, mental, and moral qualities are needed in the men who design and build such structures.

The thirteen States and three Territories within which reclamation work can be carried on embrace, with the exception of Texas, the largest political divisions of the United States. While it is not possible for any one man to know the topography and hydrography of all of these sixteen States and Territories, yet in a general way the opportunities for completing works of reclamation have been discovered by the engineers of the division of hydrography. Out of the wealth of localities offering favorable opportunities it is possible to select one or another place with reference to the wishes of the people. Other things being equal, the attempt has been made to consult the desires of the business men, commercial organizations, or public officials who have given most thought to the subject. But in the preliminary surveys and designs the considerations outweighing all others are the practicability of reclaiming the largest area of good land, of dividing this into the greatest number of homesteads upon which families can prosper, and of ultimately returning to the reclamation fund the cost

of the works. Neither sentimental theory nor political expediency has had any influence in outlining the work to be performed under the reclamation law. With the corps of men selected solely for experience and efficiency, and with localities chosen to yield the largest results, it is hoped to secure ultimately the confidence and approbation of the people of the entire country and to justify the wisdom of the advocates of national construction of irrigation works.

Immediately upon the passage of the law, and as soon as a few of these larger matters had been determined, various tracts of land were temporarily withdrawn for examination and survey. A description of these lands and of the operations will be transmitted to Congress in accordance with the law at an early date, showing all of the details of the work now in hand. There has been no attempt made to lay out in advance rules and regulations, but it has been considered wise to start the work where the difficulties from an engineering and legal standpoint appear to be least. Each obstacle is to be met as it arises. Many well-intentioned persons have raised hypothetical questions and problems which would seem to indicate the impossibility of accomplishing results under the existing law, but, while there can be no question that difficulties will be encountered, there is no doubt of ultimate success. In particular it has been urged that the State laws should be revised. While it will undoubtedly be necessary for the persons interested to secure improvements in local laws and customs, yet there are many places where progress can be made without involving radical changes. It seems the part of wisdom to continue where progress is possible with least friction, and not to attempt to anticipate remote contingencies.

The question most frequently asked is, When will construction begin? There is a desire on the part of all interested to see something actually accomplished. The friends of the movement wish to demonstrate that the law is a reality and not a theory. The people to be benefited through increased land values are anxious to see this increase take place at once; but, although the clamor for immediate work is insistent, it comes from a comparatively few persons. The great body of the people are anxious that the work shall be done right and that the public funds shall be used to the greatest possible advantage, even though some delay may ensue.

In addition to the mere work of ascertaining facts, such as costs and benefits, there is another class of operations which is being carried on quietly but which is of almost equal importance. The people who already have, or think they have, vested rights in water, or who may be benefited by the operation of the law, must, in many cases, concede some of these rights or show their good faith by uniting with the officers of the Government in making possible some of the more important enterprises.

The process of education along this line is one which must take place slowly. At first many people have the impression that the Department of the Interior is coming into the country to spend money recklessly and give away land. It is a repetition of the old story of the days following the civil war, when many of our citizens thought they were entitled to 40 acres and a mule. Now the cry is 40 acres and an assured water supply. But the law demands that while the 40 acres are given the settler must live upon them for five years and the assured water supply must be paid for at its actual cost without interest. Moreover, the water rights or privileges which may be needed in the construction will not be purchased at fancy prices, but their actual value will be paid, as nearly as this can be ascertained. It is not proposed to go into a community, straighten out all the legal difficulties, pay everyone what he wishes, and then give away the results. On the contrary, if there are legal controversies which interfere or complicate the operation of works to be built by the Government, these must be adjusted by the people themselves, and there must be presented to the Government engineers conditions so favorable that the work can be recommended as a possible and desirable one. In short, as far as possible, the people of the communities within or near which works are to be built are expected to meet the officers of the Government on a fair business basis. To do this may necessitate much hard work on the part of public-spirited men, but it is safe to say in advance that no plans will be approved unless the communities interested have made every reasonable effort to insure the success of the enterprise.

This fact, the necessity of cooperation and mutual assistance, can not be too strongly dwelt upon, for in almost every part of the country individual and corporate enterprise has already begun work, in a small way at least; and in the planning of the largest and best systems for developing the arid land more or less private land must be included or some interference be had with the flow of streams used by individuals. Great care is being taken to guard all private vested rights, and at the same time to see that the interests of the public are protected. If, however, it is apparent that undue advantage is being attempted on the part of vested interests, there can be no doubt that the project as a Government investment will be condemned at an early stage.

The ultimate operation and control of the water must be left to the people who are dependent upon the use of this water for their livelihood. Throughout the arid regions it may be said that cooperation in the handling of water has been the requisite for success. It is appreciated that some form of cooperative organization must be encouraged on the part of persons using water from a given source, and an effort is being made to formulate the project for cooperative control of the irrigation works, and to include this with the original plans and regulations for obtaining title to the land and the water.

MINING AND MINERAL RESOURCES.—Under the enlarged duties of the Survey, the examination of the conditions of occurrence of the precious metals, begun in 1900, was continued during the year 1901–2. Statistics furnished the Director of the Mint show the quantity and value of the gold produced in the United States during the calendar year 1901, according to its production from deep mines or by placer mining, and the quantity and value of the silver produced from deep mines, from lead ores, and from copper ores. The descriptive list of the gold and silver mines of the United States is still in process of compilation. In continued cooperation with the division of economic geology, fluorspar, fuller's earth, and petroleum have been investigated as to their conditions of occurrence, and at the request and under the authority of the Bureau of Insular Possessions of the War Department an examination of the mineral resources of Cuba has been undertaken by this division, reports of which have already appeared or are to appear in the publications of the Survey and in those of the War Department.

It is worthy of note that the value of the mineral products of the country again, as in 1900, exceeded $1,000,000,000 and surpassed the aggregate values of 1900 by nearly $23,000,000; but that, unlike the history of 1900, this gain was due entirely to the nonmetallic products, which, in comparison with 1900, increased in value over $55,000,000, whereas the metallic products decreased in value over $32,000,000. This decrease applied, both in output and in value, to all the important metals except pig iron, which increased in both output and value. Among the important nonmetallic products the only considerable decline was in petroleum, which increased in production nearly 6,000,000 barrels, but lost in value about $9,500,000.

The report of this division notes the production in the United States of bismuth in 1901 for the first time since 1885, and for the first time also in 1901 the production of rutile on a large scale and the manufacture of arsenious oxide.

PHYSICAL AND CHEMICAL LABORATORIES. The equipment of the chemical laboratory was considerably increased during the year, temporarily interfering with current work; nevertheless, 187 complete analyses, needed in areal geology, were reported within the year, in addition to 500 qualitative determinations of ore, minerals, etc. Interesting investigations bearing upon the origin of ore deposits and the rational constitution of minerals were also made.

The equipment of the physical laboratory was nearly completed. Numerous experiments on the linear force exerted by growing crystals and on the elastic properties of solids were made.

PUBLICATIONS.—By joint resolution of Congress approved May 16 of the present year several modifications were made of the law relating to the publications of the Survey. The most important of these

are the restriction of the Annual Report to a single volume, and the creation of a new series, called Professional Papers; the free distribution of the series of bulletins; and authority to make the number of copies published (except of the Annual Report) whatever the necessities of each case seem require, and to to order additional copies of any publication when needed to meet the public demand.

The large amount of material published by the Survey is indicated by the following figures summarizing the letterpress for the year: Manuscript pages edited, 21,774; final pages of proof read and corrected, 10,427; pages indexed, 7,282. These manuscripts and proofs represented 1 annual report in 4 volumes, 2 monographs, 9 professional papers, 22 bulletins, 17 water-supply and irrigation papers, 9 geologic folios, 2 volumes on mineral resources, and other miscellaneous publications not in the regular series. Many elaborate maps and other illustrations are included in these publications. Within the year 24 geologic folios were in process of publication, and of these 7 were completed. The comparatively small number completed was due largely to the fact that two of those in preparation—the New York City and the Chicago—are equivalent each to four ordinary folios. These two folios are of special interest to a large number of persons, particularly to many thousand students in high schools and universities. The Chicago folio has now been issued, and the New York City folio will be issued within a few weeks. Of topographic atlas sheets, 75 were finished and 18 were partly engraved.

Cooperative surveys.—As explained in my last report, a system of cooperation is in force between the United States Geological Survey and various State governments whereby the latter render financial aid to the former in the extension of its topographic, geologic, and hydrographic surveys and investigations within their borders. This system was initiated in 1884 for the making of topographic surveys in Massachusetts and New Jersey, and has since been extended to many of the States. The result has been to expedite the various classes of surveys and investigations within those States at a greatly reduced cost to both national and State treasuries by dividing the expense between the United States and the various cooperating States. Beneficial as has been this system in improving the quality and expediting the work of the Federal Government, it has been of even greater benefit to the States. This is evidenced by the increased number of applications made by States upon the Federal Government for cooperation in the extension of its surveys. During the last two years these have been so numerous and have involved the offers of such large allotments of funds that the appropriations for the United States Geological Survey have been insufficient to enable it to accept all of the aid offered.

EDUCATION.

The Commissioner of Education in his annual statement presents some interesting data and statistics of education in the United States.

The total number of pupils in schools, elementary, secondary, and higher, public and private, during the year ended June 30, 1901, was 17,299,230, an increase of 278,520 over the previous year. Of this number the enrollment of pupils in institutions supported by general and local taxes furnished by States and municipalities was 15,710,394, as against 15,443,462 for the previous year.

In addition to the enrollment in schools and colleges furnishing a general education, there were certain special institutions of various degrees of educational character, including city evening schools, business schools, schools for Indians, reform schools, schools connected with asylums, schools for cookery and other special trades and vocations, enrolling nearly half a million pupils. The enrollment in the special schools and those for general education aggregates something over seventeen and three-quarter millions of the persons receiving education for a longer or shorter period during 1901.

The value of property used for public school purposes for the scholastic year 1901 has arisen to $576,963,089 from $130,380,008 in 1870, and the expenditures for the common schools (including elementary and secondary schools, but excluding all institutions for higher education) amounted to $226,043,236, as against $63,396,666 in 1870. In the latter year the expenditure for schools per capita of the population was $1.64; in 1901 it was $2.93 per capita, the highest rate ever reached, and an increase of 10 cents to each man, woman, and child over the year previous.

The amount expended for education per capita necessarily varies much in different States; that in the mining regions being much larger than in the agricultural regions, and that in the States having the most urban population greater than in the States having the larger rural population. For instance, the amount expended per capita amounted to $4.65 in California, $5.30 in Nevada, $5.18 in Colorado, $4.93 in Massachusetts, and $4.60 for the State of New York. The rural populations expend generally less per capita, and two States, with an almost exclusively rural population, expended the one only 50 cents and the other only 51 cents per capita for education.

With the increase of wealth and the growth of villages and cities the schools continue in session a longer term and the system becomes more complete by the addition of high schools to the elementary schools. The number of high schools supported by public taxes has reached the number of 6,318, an increase of 313 over the previous year. The increase of these schools which give secondary education

is noteworthy in the Southern States: the South Atlantic States had only 115 high schools in 1890, whereas in 1901 the number had increased to 466; the South Central States had 158 high schools in 1890, and the number in 1901 had increased to 746.

With the growth of villages and cities better buildings are furnished, more professional teachers are employed, and higher wages are paid. In the items of expenditure for public schools the amount paid for salaries of teachers is the most considerable, being 63 per cent of the whole; about 18 per cent is given for buildings and sites, and 19 per cent for all other purposes.

The entire income for public schools, reported at $234,967,919, has increased from $143,194,806 for 1890. It is interesting to note that of this vast sum only 4 per cent is derived from permanent funds and rents of property held for income; 16 per cent comes from State taxes, 68½ per cent from local taxes, and about 11 per cent from all other sources.

The different divisions of the Bureau of Education accomplished considerable work during the fiscal year. The division of correspondence and records handled upward of 157,403 pieces of printed matter, and sent out letters, including acknowledgments, amounting to 12,681, and 94,725 documents. The foreign section received, entered, catalogued, etc., 2,356 books. The division of statistics sent out 38,578 copies of forms of inquiry, 25 different schedules being necessary for collection of the statistics usually tabulated; statistical returns prepared for tabulating, 15,201; computations made, 45,921; books catalogued, arranged, and shelved, 10,921. The library and museum division arranged on shelves and classified 7,225 books; catalogue cards made, 14,009; books received, entered, catalogued, etc., 3,993; number of books in library, 78,669; pamphlets, 124,700; cards classified and filed, 19,340.

EDUCATION IN ALASKA.—By an amendment to section 203 of the "act making further provision for a civil government for Alaska," etc., approved March 3, 1901, it was provided that—

> Fifty per centum of all license moneys that may hereafter be paid for business carried on outside incorporated towns in the district of Alaska shall be set aside to be expended, within the discretion and under the direction of the Secretary of the Interior, for school purposes outside incorporated towns in said district.

In the application of this law the United States district courts of Alaska have taken "court expenses" from the license fund received from outside of incorporated towns. The Commissioner calls attention to the fact that such "court expenses" will greatly decrease the fund that Congress intended for the schools, and it is possible that years may come in which the schools will be crippled by the large amounts consumed by the courts.

Under the provision of the license law there has been received from

March 3, 1901, to June 30, 1902, for education in Alaska, outside of incorporated towns, the sum of $35,882.41. With this amount the Department has maintained during the past year in the district of Alaska, outside of incorporated towns, 27 public schools, with 33 teachers and an enrollment of 1,741 pupils. The town of Douglas on the 1st of April, 1902, was incorporated, and the schools of the village passed from the control of the Bureau of Education to that of the local board of education. The incorporated towns of Nome, Eagle, Valdez, Skagway, Juneau, and Ketchikan have maintained public schools under the direction of local boards.

Complaints have been received that the school boards at Juneau and Ketchikan have refused to receive native children of Indian or Eskimo descent into existing schools or to open schools for them. The school board at Nome also neglected during the past year to make provision for teaching the native children within its corporate limits, although it received from license fees for school purposes the sum of $42,738.26. This sum was $7,962 greater than needed for use and was covered into the city treasury to be used for other municipal purposes. The question as to the legality of the action of incorporated towns in refusing to provide school facilities to the natives is a matter for determination by the courts.

INTRODUCTION OF REINDEER.—During the year the reindeer herds in Alaska have been increased by the birth of 1,591 fawns. Difficulties were encountered by the agents of the Government in procuring reindeer from Russian subjects along the Siberian coasts, owing to the condition imposed by the Russian Government that payments for reindeer should be made in coin instead of barter goods, as in former seasons. It was the intention of the Department to purchase 300 head of reindeer in Siberia, but only 30 were secured. An effort will be made to secure from the Russian Government such a modification of the terms on which it permits its citizens to sell reindeer that hereafter the agents of this Government may use barter goods instead of coin, as the people from whom the reindeer are purchased apparently have no knowledge of the use of coin. The collector of customs has called attention to the fact that the law requiring all animals imported from Asia to be taken to San Diego, Cal., for inspection before being allowed to land in America applies to reindeer introduced in Alaska. It would be impracticable to bring reindeer from Siberia, between three and four thousand miles by sea, to San Diego for inspection, and then transship them to Alaska; an effort will therefore be made to secure the detail by the Treasury Department of a customs inspector to the revenue cutter on its trip to Siberia during the season of 1903, for the purpose of inspecting such reindeer as may be purchased before the animals leave the Siberian coast.

A number of miners secured and successfully used one or two head

each of trained reindeer for transportation purposes during the past winter, and during the same period the mail between Nome and the new mining camp on Kotzebue Sound was satisfactorily carried with reindeer teams.

The domestic reindeer in the nine herds are located at the following places in the District of Alaska, namely: Point Barrow, 524; Kotzebue, 275; Cape Prince of Wales, 1,620; Gambell (St. Lawrence Island), 150; Teller (Port Clarence), 665; Golofnin, 424; Eaton (Unalaklik), 1,198; Nulato, 206; Kuskokwim, 645; total, 5,707.

AGRICULTURAL AND MECHANICAL COLLEGES.—By the act of Congress approved August 30, 1890 (26 Stat. L., 417), an annual appropriation of $15,000 for the year ending June 30, 1890, and $1,000 additional for each subsequent year until said annual appropriation amounts to $25,000 was made "for the more complete endowment and maintenance of colleges for the benefit of agriculture and the mechanic arts," established in accordance with the provisions of an act of Congress approved July 2, 1862. Said act requires annual reports to be made to the Secretary of the Interior by the treasurers and presidents of the institutions receiving the benefits thereof and imposes upon the Department the duty of ascertaining whether the respective States and Territories are entitled to receive the annual installments of the fund. During the year the reports from the treasurers of the colleges giving instruction in agriculture and the mechanic arts were carefully examined and the disbursements accounted for therein were found to have been in strict conformity with the law.

Detailed reports from the presidents of the several agricultural and mechanical colleges show a decided increase in instructors, students, property, income, etc., as well as the inauguration of new lines of work. A considerable number have established other courses, ranging from four weeks to two years, in agriculture, the mechanic arts, dairying, domestic science, etc., for the benefit of persons who are not able to take the regular course, and these are well attended. Considerable attention is paid to farmers' institute work, thirty-seven of the colleges having participated therein during the past year, thereby aiding in the instruction of many practical farmers. The attendance at the farmers' institutes was estimated at 445,144. Instruction in mining engineering is receiving increased attention by these institutions. Courses of study in mining engineering are now offered by eighteen of the institutions, three having established such courses during the year.

The legislature of New Jersey, by an act approved March 17, 1902, provided for the establishment of a course in practical and scientific instruction in the art of clay working and ceramics in the State Agricultural College, and appropriated the sum of $12,000 for the organization, equipment, and maintenance of the department for the current year and $2,500 annually thereafter. Two other institutions, the Iowa

State College of Agriculture and Mechanic Arts and the Ohio State University, offer courses of study in ceramics.

The statistics for the year ended June 30, 1901 (the latest available) show that 29,950 students were enrolled in the agricultural and mechanical departments. Of this number 8,610 were enrolled as preparatory students, leaving 21,340 in the college departments. The number of students pursuing the various courses of study was reported as follows: Agriculture, 5,625; various branches of engineering, 9,605; architecture, 191; household economy, 2,432; veterinary science, 984; dairying, 1,402; other courses, 1,101. The number of students receiving instruction in military drill was 14,233. The Government contributed toward the education of the 29,950 students during the year ended June 30, 1901, at the rate of $40.06 per student. The total income for the year was reported as $7,325,604, of which amount $3,073,736 was granted by the several States and Territories. The receipts from Federal sources were $1,937,136, of which amount $1,200,000 was granted by the act of August 30, 1890, $682,690 was interest on the funds derived under the act of July 2, 1862, and $54,446 interest on other land-grant funds. The remainder of the income was derived from other endowment funds, fees, and miscellaneous sources. The total value of the property held by or for the use of these institutions amounts to $68,084,925.

The total appropriations to the several States and Territories under the act of August 30, 1890, from the passage of the act up to and including the fiscal year ending June 30, 1903, amount to $14,002,000.

THE TWELFTH AND PRIOR CENSUSES.

The Director of the Census reports that the law establishing a permanent Census Office became effective July 1, 1902, and at that date the work of tabulating and publishing the returns of the enumerators for the census of 1900 had been practically completed. The results have been embodied in 10 quarto volumes, comprising the reports on Population, Vital Statistics, Agriculture, and Manufactures. This great task was completed in a remarkably short time; not since the census of 1840 has the period been so brief between the enumeration and the publication of the final results. The returns for that census were comprised in 840 pages, while those of the Twelfth Census required more than 10,000 pages. The completion of the work in so short a time was due to the liberal provision of the act of Congress, which gave the Director wide discretion in the conduct of the office, and to the skill, perseverance, and enthusiasm of those immediately in charge of the work. The advantages possessed by the permanent office are such that it is likely the time between the enumeration and publication of the returns can be still further reduced, possibly to

a period of eighteen months. The maximum number of employees of the Twelfth Census, including supervisors and enumerators, was 59,373. The maximum number of 3,554 persons employed in the Census Office at Washington was reached in 1900, and there were 2,648 special agents at work in the field. In tabulating the returns of the enumeration 1,642 punches, 311 electric tabulating machines, and 74 adding machines were required, and approximately 215,000,000 cards were used.

The cost of the temporary work of the Twelfth Census was $11,854,817.91, an average of 15.5 cents per capita. The total cost of the field work was $4,358,670.04, an average of 5.7 cents per capita. The inability to secure satisfactory enumerators in some cases was the principal difficulty attending the enumeration. This caused additional work in the office and an increased expense. It is believed that in taking the Thirteenth Census this difficulty can be obviated to some extent and a more effective plan devised for the supervision of the field work.

Under the act of Congress providing for the permanent Census Office, there were appointed a chief clerk, a disbursing clerk, 4 chief statisticians, 4 expert chiefs of division, a stenographer, 783 clerks, and 104 laborers and other employees. Thus a material reduction of the force of clerks employed in the temporary office was made. It was unavoidable, however, that some clerks not to be permanently retained should be carried into the reorganization of the office following June 30, since an abrupt transition from the temporary to the permanent organization was impossible. A reduction of the clerical force was made September 30, and as the work of the various divisions in connection with the remaining inquiries takes shape it is likely that economic organization will permit further reduction. As soon as practicable after the organization of the permanent bureau the collection of statistics for the special reports authorized by section 7 of the act of March 6, was apportioned among the four chief statisticians, to be taken up as circumstances will permit. These reports include statistics relating to the special classes, crime, pauperism, and benevolence; social statistics of cities; public indebtedness, valuation, taxation, and expenditures; statistics of religious bodies, and those relating to electric light and power; telephone and telegraph business; to transportation by water; express business and street railways; and to mines, minerals, and quarries. The Census Office has already begun the collection of the data required for some of these reports. Part of the information will be collected through the mails, but a certain amount of field work is required. In connection with social statistics an inquiry relative to the "number of children and children living" will be taken up, with a view to ascertaining the relative fecundity of different nationalities. During the coming year the office will also collect statistics of births

and deaths in registration areas and data on irrigation for the crop year 1902, as required by Congress.

Congress also provided that the Director of the Census should annually collect the statistics of cotton production as returned by the ginners, and should issue weekly bulletins from September 1 to February 1 presenting these statistics. A careful investigation showed that it was impracticable to conduct this inquiry in such a way as to give the amount of cotton ginned as frequently as the law contemplated, owing partly to the fact that many of the ginneries are remote from railroads and in some cases from post-offices. It has been decided, therefore, to publish at the outset at least three or possibly four reports in the period from September to February, and to increase the number as often as circumstances will permit. In the prosecution of this work 624 special agents were appointed, or practically one to each cotton-growing county. They will visit the 28,974 ginneries which handle nearly the whole cotton crop. An expenditure of nearly $50,000 will be necessary in order to make the three reports of the cotton crop for 1902. The expense will be increased in case additional reports are issued.

The report of the Director shows that prosecutions have been conducted against certain supervisors, enumerators, special agents, and others for offenses committed against the law in six States and Territories. Some of these cases have been closed, while others are still pending.

PRIOR CENSUSES.

The records of the First (1790), Second (1800), Third (1810), Fourth (1820), Fifth (1830), Sixth (1840), Seventh (1850), Eighth (1860), Ninth (1870), and Tenth (1880) Censuses, inclusive, are bound in book form and stored in the Patent Office building. Those of the Eleventh (1890) Census are stored in the Union Building, on G street, between Sixth and Seventh streets, N. W. The population and other schedules of this census are unbound, and in their present condition require the greatest care in handling to prevent mutilation or loss of schedules. Much time and labor would be saved in the examination and compilation of excerpts therefrom if they were properly bound. The population schedules of 1790 and 1800 have been paged, arranged, and indexed, and considerable progress has been made in the work of the schedules of 1810. Owing to the haphazard manner in which these old schedules were arranged prior to binding, coupled with the fact that frequent reference to books and maps in the Congressional Library is necessary to secure reliable information as to the municipal subdivisions of the States in 1800 and 1810, this work does not progress very rapidly. The necessary care, attention, and repair required to prevent further

deterioration of the valuable original manuscript records of the population of the country from 1790 to 1890, inclusive, have been given, and information compiled therefrom has been supplied to a large number of applicants throughout the United States for court and other purposes. Much interest is manifested by the people in these original documents and a large number have made personal examination of the schedules at the Department.

The law makes no provision for the exaction of a fee for furnishing copies, certified or otherwise, of the old census records. A large amount of money is annually lost to the Government by reason of the absence of such legislation, and I therefore recommend the enactment of a law by Congress authorizing the Secretary of the Interior, in his discretion, to charge a fee of 10 cents a hundred words for copies, certified or otherwise, of the census records.

PUBLIC DOCUMENTS.

The report of the chief of the document division of the Department, submitted in compliance with the provisions of section 92 of the act approved January 12, 1895, shows that during the last fiscal year publications of the Government were received and distributed by the several offices and bureaus of the Department as follows:

	Received.	Distributed.
Office of the Secretary	117,370	125,042
Patent Office	450,540	396,208
General Land Office	286,800	213,922
Pension Office	12,016	15,293
Office of Indian Affairs	8,356	7,815
Office of Commissioner of Railroads	430	392
Bureau of Education	65,717	66,264
Geological Survey	835,954	599,210
Census Office	2,343,920	1,691,088
Total	4,121,103	3,115,234

Three hundred and seventy-six copies each of volumes 181 to 183, United States Reports, were received from the reporter of the Supreme Court and distributed to judicial and executive officers of the Government, in compliance with the provisions of sections 681 and 683 of the Revised Statutes and of act of February 12, 1897. Congress has at length acted upon the recommendations repeatedly submitted by the Department and by the passage of an act approved July 1, 1902, "for the further distribution of Supreme Court Reports and for other purposes," made adequate provision for supplying executive and judicial officers of the Government with said reports and with a digest of the same, excepting the judges of the supreme courts of the District of

Columbia, Hawaii, and Porto Rico, who were without doubt inadvertently overlooked. They should be provided for during the next session.

The Official Register of the United States was compiled during the year under the supervision of the chief clerk of the Department. This work comprises two quarto volumes, aggregating 3,400 pages, recording the names, States where born, Congressional districts and counties, whence appointed, places of employment, and compensation of about 270,000 officers and employees of the United States Government.

Forty-three thousand eight hundred and seventy-six maps of the United States prepared by the General Land Office were received by the Department during the year, of which 32,604 were delivered to the two Houses of Congress. The manuscript map of the United States from which the editions of the map were heretofore produced having become unserviceable, the Department, on the 31st of October, 1902, entered into contract with R. F. Bartle & Co., of Washington, D. C., the lowest bidders for the work, for the making and delivering of a copperplate base of the map of the United States. The work thereon has progressed satisfactorily, and the completed base will be delivered in time to permit of the reproduction of maps therefrom during the present fiscal year.

Subsequently proposals were solicited for the reproduction of such map by lithography from transfers from such copperplate base. The lowest bid received for the work was at the rate of 49½ cents per map for an edition of 40,000 or more. This has been accepted, and a form of contract is now in the hands of the successful bidders for execution. This map reproduced from the copperplate base in question will, it is confidently believed, be superior to any map of the United States hitherto published.

Acting favorably upon recommendations in previous annual reports, Congress has materially added to the value of United States maps to recipients by providing that those printed under the appropriation in the legislative act approved April 26, 1902, shall, before distribution, be mounted on rollers, thus making them ready for immediate use.

The sum of $4,992.64 was received from the sale of documents during the year by the Office of the Secretary, and $8,328.26 from the United States Geological Survey.

OFFICE OF RAILROAD AFFAIRS.

The operations for the last fiscal year and the present condition of the several railroad companies which have received subsidies in bonds and lands from the United States, and which come under the provisions of the act of June 19, 1878 (20 Stat., 169), are set forth in the report of the Commissioner of Railroads.

Attention is invited to statements showing the increase in net earnings of these roads, as also in their gross earnings and expenses during the last fiscal year. The increase in net earnings over those of the previous year was more than $22,000,000; in gross earnings more than $48,000,000, and in expenses about $28,000,000. These figures would seem to evidence a marvelous growth and prosperity among the people of the West, where all these roads are situated. The large increase in expenses is explained by the betterments and additions to roadway and rolling stock, which have been almost universal, and by the many permanent improvements which have been made, the aggregate increase in length of lines being over 2,600 miles.

The Commissioner states that all the companies which were aided by the Government with bonds have settled their indebtedness in some manner, with the exception of the Central Branch. The debt of the Union Pacific was settled in full November 1, 1897. The debt of the Central Pacific was funded, the company binding itself to the payment of twenty promissory notes, payable on or before the expiration of each successive six months from February 1, 1899, for ten years, each note bearing interest at the rate of 3 per cent per annum, payable semiannually. A condition is attached to the effect that if default be made in any payment of either principal or interest of any of said notes, or any part thereof, all of said notes then outstanding, principal and interest, shall immediately become due and payable, notwithstanding any other stipulation of the agreement of settlement.

The claims of the Government against the Sioux City and Pacific were purchased at public sale on June 20, 1901, by the Chicago and Northwestern Railway Company, and on August 28, 1901, that company purchased of the Sioux City and Pacific Railroad Company all its remaining interest in the railroad property, and assumed all its debts and obligations of every kind. The operations of the Sioux City and Pacific Railroad are consequently embodied in the report of the Chicago and Northwestern.

The Central Branch Union Pacific Railroad Company was aided by the Government with bonds, but was sold under foreclosure proceedings, and was succeeded by the Central Branch Railway Company, incorporated July 6, 1899. The amount realized by the sale was sufficient to cover the first mortgage only, so that the United States, holder of the second mortgage, received nothing in reimbursement of its claim against the company, amounting to $3,750,125.13. In regard to this sale, the Attorney-General held that—

> while the United States is named as a defendant in the bill of complaint to foreclose the mortgage on the Central Branch Union Pacific Railroad, no subpœna, citation, or other process was served upon it, nor did it appear as a party, and is therefore not barred by said decree of sale, and might still redeem the property or cause its resale on account of its subsidy lien.

He holds that one-half of the compensation due from time to time for the services rendered by this company to the Government should be withheld and applied upon the bonds issued by the United States in aid of its construction, notwithstanding the foreclosure and sale of the same.

The Commissioner states that besides these four companies which were aided with bonds, there are 19 companies which have been aided by grants of land, and which come within the provisions of the law requiring a monthly and annual report to his Bureau. The operations of these companies are set forth in his report under their respective heads.

THE TERRITORIES.

Alaska.

The governor of Alaska, John G. Brady, in his report, gives an extended account of the conditions existing in the district during the year. He reviews the status of the land and its occupany from the time of the transfer of the country by Russia and the various laws enacted by Congress relative thereto. He states that the future welfare of the district is dependent upon the enactment of liberal laws by Congress which will enable persons so desiring to acquire title to the public lands.

Under existing laws it is a very difficult matter to obtain title to lands other than those of a mineral character. By the act of May 14, 1898 (30 Stats., 409), the homestead laws were extended to the district of Alaska. Not a single entry, however, has been allowed for the reason that the law applies only to such lands as have been surveyed. In the sundry civil act of March 3, 1899, the system of public surveys was extended to the district of Alaska, and though it was entitled to a portion of the sum of moneys appropriated for the public surveys at that time and in subsequent years, no land has as yet been surveyed for homestead purposes.

Bids were solicited for the making of surveys but, owing to high rates of transportation between the settlements of Alaska, the high price of labor, and the length of time required before payment for services could be made, the surveyors were not disposed to undertake the work, even at the maximum rates fixed by Congress. To remedy this condition of affairs, he states that in his last annual report he urged the repeal of section 1 of the act of May 14, 1898, and the extension of the general land laws to Alaska, so that settlers coming into the country might find laws similar to those enacted for other parts of the Union, and, furthermore, recommended an appropriation of $200,000 for public surveys, which, however, did not receive favorable

consideration. The coal land laws, he adds, were extended to the district by the act of June 6, 1900, but, like homesteads, coal must be located on surveyed lands. In some places, like the Cook Inlet coal fields at Homer, the enterprise started in the neighborhood of Comptrollers Bay, and elsewhere large amounts have been invested in the development of the mines, building wharves, railway tracks, etc., but the persons interested have no assurance of title or security of tenure if they begin the shipment of coal.

The total population of Alaska according to the census of 1900 was 63,592. Since this enumeration a large number of natives of the northern part of the district have perished as a result of an epidemic which swept through their settlements. Some of the towns, such as Ketchikan, Douglas, Valdez, and a few others, have gained in numbers. The population of Skagway has declined very rapidly in the past six months, while there is no perceptible change in Juneau, Sitka, and Kodiak.

In the absence of authentic population statistics covering the past two years it is impracticable to state what the percentage of gain has been, but it is believed to be equal to the loss caused by the death of the natives, and the present population may be regarded as what it was in 1900.

During the year the customs receipts aggregated $84,126.45, and the expenses of collection were $66,292.43. The total amount collected by the several clerks of courts on account of license fees in the district was $235,648.64; of this the greater portion was expended in court expenses and providing school facilities in incorporated towns. Seventy-five thousand six hundred and twelve dollars and eight cents of the total receipts was covered into the Treasury; of this amount $48,152.08 was collected from the country outside of incorporated towns, one-half of which, $24,076.04, was available for school purposes conducted by the Bureau of Education outside of incorporated towns.

Transportation facilities throughout northwestern and eastern Alaska continues to be a great problem. In southeastern Alaska and on the seacoast it is a very simple question, as nearly all places can be reached by seagoing vessels. The Yukon River bisects the territory. Serious obstacles have presented themselves to those endeavoring to navigate this stream, some beyond removal by the best engineering skill. Bering Sea for many miles outside the delta is very shoal. Steamers coming out or going into Apoon Pass on their way to or from St. Michael are often held on these flats for hours. Navigation is entirely closed for more than half the year, while the river and its great tributaries are frozen over. Reliance for transportation must therefore be upon railways, and these will have to be connected with ports on the coast which are open the year round.

Several corporations have entered the district with a view to the construction of railroads; one has selected Valdez as its home port and purpose building a standard-gauge road with branches along Copper River Valley and across the divide to Eagle City. A large force of surveyors and engineers have been in the field during the year making preliminary surveys preparatory to beginning actual work. Another projected road is from Resurrection Bay on the southern coast of Kenai Peninsula cutting across toward the Yukon River, and two companies have under consideration the construction of a road from Illiamna Bay, near the entrance of Cook Inlet, running thence in a northwesterly direction toward Nome and Bering straits.

The trans-Alaskan military road has been graded and bridged by the officer under the War Department from Port Valdez to the crossing of Tanana River, a distance of 265 miles, with a pack trail cut 80 miles south from Fort Egbert, leaving about 70 miles to be cut between Tanana and Fort Egbert.

Two light-houses have been finished and are in operation in southeastern Alaska. They were a necessity, and the accommodations there are appreciated by all mariners. Other light-houses are in process of construction in Clarence Strait and Scotch Cap and Unimak Pass. Better administrative results in this service, it is stated, would be secured by carrying into effect the recommendation in the report of the Light-House Board that Alaska be made an independent light-house district, so that an inspector, with a tender and employees, would be permanently stationed therein, and be able to give prompt attention to the business of the district.

Considerable progress has been made by the natives and Eskimos toward civilization. Large numbers have abandoned the old style of living and adopted the modern avocations of white men. They live in permanent communities, build substantial houses, engage in work at the sawmills, logging camps, in the mines, and about the wharves, and should be encouraged to preserve their spirit of self-respect, independence, and self-support. Their legal status has as yet not been defined by Congress, and some steps in that direction should be taken at the earliest practicable date. Article III of the treaty with Russia provides that the uncivilized tribes will be subject to such laws and regulations as the United States from time to time adopt in regard to the aboriginal tribes of that country. It is time, the governor states, that this matter should be taken up for consideration, and he recommends that Congress authorize the appointment of a commission of five persons to inquire into the present condition, rules, and customs of the natives of Alaska, and report to that body for its guidance in framing necessary legislation.

The agricultural possibilities of the district have been demonstrated not only by the results obtained at the several agricultural stations,

but from private enterprise. Rye and flax yield good crops, potatoes are plentiful, and vegetable gardens in various sections of the district have been successful. Native berries are abundant, and raspberries, currants, and gooseberries have been cultivated with remarkable success. The crop of wild apples around Sitka has been abundant, and many people have planted fruit trees. It is stated that there was grown in the Yukon Valley, near Dawson, and shipped for exhibition at the Toronto fair, celery, rhubarb, lettuce, onions, turnips, cauliflower, cabbage, potatoes, etc., as well as grain and wheat, fully matured and of the best quality. These are from a section of the northwestern country above the sixty-fourth parallel, which runs through Greenland and Iceland on the eastern side of the continent.

Stock raising is on the increase. Different kinds of grass native to the country, luxuriant and very nutritious, grow over a large area. Cattle and horses thrive. One stockman purposes taking a thousand sheep to Kodiak Island to winter. At Treadwell, Juneau, and Skagway $27,000 a month is spent for meat, and with the meat problem becoming serious in the States, it can be understood how important it is for Alaska to furnish its own supply of meat.

The timber of Alaska is a very important item of its wealth. There are great growths of hemlock, spruce, and yellow and red cedar. The alder grows in bottom lands and obtains a growth in places of 2 feet in diameter. Wild apple trees are abundant, frequently 10 inches in diameter; when seasoned the wood makes excellent malls, mallets, and all kinds of handles, walking sticks, etc.

On the 20th of August, by Presidential proclamation of that date, five large and many small islands in southeastern Alaska, in what is known as the Alexander Archipelago, were reserved from settlement, entry, or sale, and set apart as a public reservation.

The North American Commercial Company, under its contract with the Government, killed upon St. Paul and St. George islands 22,304 fur seal. This number at the contract price of $9.62½ per skin, together with the annual rental of $60,000, amounts to $274,676.05.

The condition of the people on the island is good, they being well provided with means for their betterment through the faithful performance by the company of the obligations assumed under its contract.

Favorable mention is made of the reindeer industry in northwestern Alaska, and of the good accomplished thereby in affording Eskimos who are trained to use the animals opportunities to become self-supporting. He estimates the total number of domestic reindeer in Alaska to be between 6,000 and 7,000.

Another great factor in computing the wealth of the district is its great variety of edible fish: salmon, cod, halibut, herring, black bass, red snapper, oolachikan, and many other kinds abound. The salmon

pack for 1902 will exceed that of 1901, and its market value is in excess of the original purchase price of $7,200,000. Many new canneries have engaged in business, and the output of the old companies have been far in excess of their expectations.

The mineral wealth of the district is great. Large deposits of copper have been found in various sections; tin ore has been discovered near Cape York on Seward Peninsula; cinnabar has been reported at the head waters of the Kuskokwim; traces of platinum have been found in the clean-ups at Nome and in the district around Mount Drum; noteworthy deposits of iron exist near Kluckwan, on the Chilkat River; and coal is found in abundant quantities.

Petroleum has been discovered in two sections of Alaska; on Comptrollers Bay a well has been driven several hundred feet, with a flow of crude oil of a fine grade. A well has also been driven in the region of Lake Illiamna on the Alaska Peninsula; the quality of oil procured therefrom has been pronounced good.

No definite statement of statistics as to the value of the output of gold in the district can be given. Placer mining is spread over a vast area and new discoveries of gold are being constantly made. It is estimated that the yield of the placer and hydraulic mines for the past season was $9,000,000.

On the 16th day of January, 1902, the contract entered into with the board of trustees of the Oregon Insane Asylum, dated January 16, 1901, for the care and custody of persons legally adjudged insane in the district of Alaska, was renewed with the approval of the Department for the period of another year. At that time 12 persons had been adjuged insane and were under treatment in the asylum. Since then 10 have been admitted, 3 discharged as cured, and one transferred to another institution.

Section 32 of the act of June 6, 1900, prescribing a civil code for the district of Alaska, provides that the fees received for certificates issued to members of the bar and for commissions to notaries public shall be set aside to be disbursed on the order of the governor in maintaining the District Historical Library and Museum. The moneys received from this source and available during the year aggregated $3,212.78, of which $418.61 was expended, leaving an available balance of $2,794.17.

Two hundred and seventy-seven volumes and 143 pamphlets were added to the library during the year, making a total of 4,277 volumes, many of historical character and bearing upon the settlement of Alaska and the States bordering on the Pacific. The Totem poles presented to the museum by the Hydah chief of Kasaan Bay were repaired, painted, and erected upon the historic point near Indian River, Sitka. Mine owners have also donated samples of ores taken from various sections in the district, which marks the beginning of the museum's mineralogical collection.

In recapitulating the legislative needs of the district the governor states that—

We want the land laws overhauled and put in shape as they are in Washington and Oregon, and, besides, a donation-claims law, to run for five years; a delegate to look after the interests of the district in Washington; a commissioner of fisheries, with vessel, helpers, etc.; a commissioner of mines similar to the minister of mines in British Columbia, our near neighbor; a commission appointed to examine into the condition of the natives of Alaska, who are to report to Congress with recommendations; license law inquired into and amended; encouragement given to those who are undertaking to furnish means of transportation; that Alaska shall be made a light-house district and furnished with a tender to do the work; and we want the means to show what we can do at St. Louis. All these matters demand the attention and serious consideration of Congress.

Arizona.

The report of the governor, Col. Alexander O. Brodie, presents a comprehensive statement of the varied resources and the general condition of the Territory during the year.

Arizona, the sixth largest political division in the United States, contains within its boundaries 113,000 square miles of area, or 72,320,000 acres, and from the variety of its resources, the beauty of its climate, and the grandeur of its scenery, is one of the most interesting and attractive of the great subdivisions of the United States.

In 1860, Arizona constituted a county in the Territory of New Mexico and had a population of 6,482. It was organized as a territory February 24, 1863. In 1870 it had a population of 9,658. The total population of the Territory, as shown by the census of 1900, was 122,212, of which 92,903 were whites, 26,480 Indians, 1,848 negroes, and 247 Japanese. Of the white population, 70,508 were native born and 22,395 of foreign birth. Of the foreign born, 50 per cent were in all probability Mexicans, the others being divided among the nationalities, Swedish, Irish, German, etc.

The net bonded and floating indebtedness of the Territory is $1,065,461.90, a considerable decrease over the previous year. The governor states that the financial condition of the Territory is most flattering, evidence of which is presented in the sale of Territorial World's Fair bonds for St. Louis Exposition at a premium of 7 per cent. This condition he regards as due to the prompt manner in which the Territoral interest on outstanding indebtedness is paid and to rigid retrenchment in the public service.

The assessed valuation of taxable property has increased during the year to $39,083,177.57 as against $38,853,831.37 for the year 1901.

The average rate of taxation in the several counties in Arizona is excessively high as compared with older and wealthier commonwealths. This results from various causes; first, being the added expenses and responsibility in all new communities to secure the con-

struction and maintenance of Territorial institutions, such as the Territorial capitol, insane asylum, Territorial prison, reform school for juvenile offenders, University of Arizona, normal schools, the various buildings at the several county seats, and the separate and extensive school buildings of the common-school system throughout the several counties; second, from the inadequate methods of listing and assessment of property, which throws the greater proportion of the burden upon the small holder and does not secure proportionate returns from the larger and more extensive holder; third, the injustice of allowing that great wealth-producing industry—mining—to escape on a comparatively small percentage of valuation, and fourth, the impossibility of making accurate lists of range cattle and horses for assessment.

The governor states that a proper and just listing and valuation of all property in the Territory, including all large producing, valuable mines would result in lowering the tax rate, the securing necessary funds for the proper maintenance of the government without imposing unjust burdens upon any, and give added encouragement to the investment of capital within the Territorial boundaries. The public school system of Arizona embraces a comprehensive course of education, and substantial advancement has been made throughout the Territory in school work during the year. The whole number of school children is 25,259, an increase of 1,824 over 1901; 19 new schoolhouses were built and 11 new districts organized. The valuation of school property is $654,942. The University of Arizona ranks among the best in the United States, and the two normal schools are excellent educational institutions. All portions of the Territory are well supplied with schools, and attendance is compulsory.

Religious life in the Territory has made rapid progress, the ordinances of religion being supplied to the most remote frontier mining camps and other settlements. The governor presents a comprehensive statement of the condition of the various church organizations of the Territory, which he includes under the subject of education, believing that persons desiring to settle in a new country first inquire about the educational institutions and churches. This report shows that there are now 135 churches in Arizona of all the different religious denominations. There are 150 ministers, and the total church population is 53,826, an increase during the year of 1,570. There are 286 Sunday schools, the membership of which is 12,239, showing an increase over the previous year of 1,111. The total valuation of church property in Arizona is $382,914, so far as the valuations are given in the statements of the different churches. The governor, however, states that a number of church organizations failed to submit statements, hence the total of all churches is not given.

Railway construction in Arizona is active. During the year there was built 38.5 miles of railway by the Arizona and New Mexico Rail-

way Company; 23 miles by the Santa Fe, Prescott and Phoenix Rail way, known as the Hell Canyon Cut-off, and 7.8 miles to connect the Poland mine with the Prescott and Eastern Road; also 5 miles of line from Mayer toward Crown King. The El Paso and Southwestern has built 51.12 miles of road, and is engaged in constructing a branch from Fairbank to Tombstone, which will be pushed on to College Peak to connect with the main line of the El Paso and Southwestern.

Banking in the Territory flourishes, and was never so prosperous as it is this year. On June 30, 1902, the aggregate deposits in Territorial and national banks was $7,015,087.98, a gain of $789,607.98 over 1901. The loans and discounts amount to $4,178,116.16; stocks, securities and claims, $799,776.98; United States bonds and premiums, $408,819.01; cash and due from banks, $3,085,060.91; United States redemption fund, $10,685; banking house furniture and fixtures, $146,642.60; surplus and undivided profits, $459,112.68. The resources of the building and loan associations in the Territory as represented in the loans on real estate are $635,812.38.

The largest pine forests in the United States are located in the northern portion of Arizona and cover an almost unbroken area of 10,000 square miles. A number of forest reserves have been made during the past year, removing large areas of land from entry. The San Francisco Forest Reserve, created August 17, 1898, was enlarged by Executive order of April 12, 1902, so as to cover the sections owned by the Santa Fe Pacific Railroad Company, successors to the Atlantic-Pacific Railroad. The Black Mesa Forest Reserve was created August 17, 1898; the Prescott Forest Reserve was created May 10, 1898, and enlarged October 21, 1899; the Santa Rita Forest Reserve was created by Executive order of April 11, 1902, and is situated south and southeast of Tucson; the Santa Catalina Forest Reserve, created by Executive order July 2, 1902, is situated northeast of Tucson; Mount Graham Forest Reserve, created by Executive order dated July 22, 1902, is situated northeast and south of Camp Grant Military Reservation; Chiricahua Forest Reservation, created by Executive order of July 30, 1902, is situated east of Tombstone, in Cochise County, and extends about 10 to 15 miles from the New Mexico boundary; Grant Canyon Forest Reserve was created by Executive order of February 20, 1893. Four sections of land southeast of Tucson, in Pima County, were reserved during the year for an agricultural experiment station, and the director of the agricultural experiment station of Arizona has under way, upon this land, experimentations in the improvement of the ranges.

The settlement of lands has progressed rapidly during the year, but with water storage, thousands of acres now nonproductive can be brought under cultivation and the population and taxable wealth of

the Territory will increase proportionately. Upon this subject of water storage and irrigation, the governor states:

Various causes have combined to facilitate the flow to the channels of the streams, the rainfall that annually comes to the Territory preventing the percolation that insures a permanent water supply, and causing instead torrential floods during both the winter and summer storms. Among these causes may be mentioned the destruction of the forests by fire and otherwise, the depletion of the grasses on the range by overstocking, and consequent treading out of the same. The question now arises as to the best method to control these flood waters and to hold the same in reservoirs for use during the season when most needed, and the question is answered by the terms of the reclamation act, which allows, under direction of the honorable Secretary of the Interior, the proceeds from the sales of Government lands in the several States and Territories comprising the arid belt to be used for the construction of artificial reservoirs by means of dams for the purpose of impounding the flood waters now wasting down the different streams, the same to be used at convenient seasons and when needed in irrigating lands lying below.

At no time in the history of the West has so beneficial a law for the arid belt been placed upon the statute books as that above quoted, and as the years go by its benefits will be appreciated to a greater extent.

Being cumulative in its effect, the operations under it will grow from year to year, and new homes for thousands will gradually be established. Eventually, as the true workings of the system shall become known and appreciated by the whole people of our common country, when appropriations shall be needed for the hastening of any enterprise under this head, they will be forthcoming as readily and willingly as have been appropriations for other matters of public benefit, and no enterprise can be of better public policy than the furnishing of homes for the citizens of the country at large.

Arizona contains within its boundaries many drainage areas of large extent, all possible of utilization under the terms of the Hansbrough-Newlands Act.

Notable among these are the basins of the Gila, the Salt, the San Pedro, the Santa Cruz, the Verde, Bill Williams Fork, and the Hassayampa rivers. The Gila being supplied from the largest and most extensive watershed is in consequence the most important of all streams lying wholly or almost wholly in the Territory. Nearly all other streams mentioned are tributary directly or indirectly to the Gila, and have each irrigated areas of their own. On all can be found available reservoir sites eventually to be used, under the law, for the reclamation of the arid lands tributary thereto.

Artificial reservoirs should meet certain conditions and be peculiarly fitted by nature, in order that the cost of construction of the necessary works will be in reasonable proportion to the value of the water stored, and these conditions nature has complied with in many sites on the different streams mentioned as having extensive drainage areas, and which secure their water supply from the high mountain ranges. Notable among these are the San Carlos reservoir site on the Gila River, the reservoir site at the Buttes on the same stream, and what is known as the Tonto reservoir site on Salt River, these having in the past been called to the attention of the Government, and reliable data obtained in each case on which estimates can be based.

Arizona lays claim to a just and proportionate share of the benefits to accrue from the application of the act establishing Government aid for irrigation, for the reason that nowhere else can be found a more productive soil or so large areas that can be made ready for irrigation with so small an expenditure, and a climate so mild as to allow the successful cultivation of all semitropical plants, which, in conjunction with the fertility of the soil, produces so great a quantity of value per acre per year.

It is but just that Arizona should ask that the new system be inaugurated within her borders; that the most available and valuable site be selected for the initial movement; that when a site be selected it be considered in its bearing upon a further and greater extension into a system of reservoirs upon this stream of sufficient capacity to control and impound all flood waters and thus assure the reclamation of all the arid land possible. On all the smaller as well as on the larger streams similar systems can be established, so that eventually by the operation of this law alone the greater part of the available land of the Territory will be included in the irrigated area.

It is well that the General Government should retain control of the reservoir sites and impovements until such time as, under proper restrictions, the title shall pass to those owning the lands irrigated, and should, through its agents, see to the equitable distribution of the stored waters, to the end that the greater good shall come to the greater number.

Irrigation has been carried on in Arizona since prehistoric times, as is attested by the ruins of ancient canals, and villages once peopled by possibly a million souls of a prehistoric race who depended for their sustenance to a great extent upon agriculture; and there is no reason why in the future, under a proper system of reservoirs, there should not be again, even greater in numbers, a prosperous and contented people benefited and enriched by the products of the soil.

The conservation of flood waters should be attended by a proper and equitable division and by a supervision that insures the doing of its full duty by every acre-foot when distributed to the land.

Government aid to irrigation enterprise is not new and untried, as is witnessed by the system established in India under government control, and that great system lately established in the valley of the Nile, in Egypt, which is but lately or about to be completed. Equal, if not greater, success will attend should water storage be an accomplished fact in Arizona.

To the conservation of the flood waters the agricultural interests of the Territory must look for their salvation.

Mining occupies the first place in the Territory's industries, the production of copper, gold, silver, and lead being very great. The past year has been characterized by great activity in mining, and a large influx of capital for exploration and development. The output of the old established properties has been steadily maintained, and new discoveries give bright promises for the future. Increased attention has been given to mining the ores of molybdenum by reason of an increased demand for the metal to alloy with steel. Black and white marble in large deposits and of superior quality, as well as extensive deposits of diatomite, have been discovered. The live stock industry maintains its place as second in importance among the great industrial resources. A protracted drought during the year caused some losses in stock raising. The sheep industry is in excellent condition. Native stock has been improved by the importation of blooded stock, and the industry has entered upon a bright future. Sanitary laws are in force and the general healthfulness of cattle is good. During the past year there were shipped out of the Territory 111,429 head of cattle, 4,587 horses and mules, 2,404 hogs, and during the

same period there were slaughtered for home consumption 37,531 head of cattle. The assessed valuation of live stock is fixed at $4,314,231.80.

The report of the governor contains statements from the different Indian agents throughout the Territory which show the condition of the Indians to be much improved over previous years in education and agriculture. Industrial schools are maintained and the Indians are taught along the lines which best fit them for earning their own livelihood. There are at present in the Territory 26,480 Indians.

In closing his report the governor recommends due consideration by the Department to Arizona's claims to statehood, and an extension of such aid as may be practicable in securing the passage of the bill pending in Congress providing for the admission of Arizona, New Mexico, and Oklahoma as States.

The question of the admission of the Territory as a State is one wholly within the jurisdiction of Congress, and this Department can do no more than direct your attention to the views of the governor in the matter.

The governor also recommends that "under the reclamation act" the claims of Arizona for Government aid in irrigation be fairly and carefully considered and the same extended, to the end that within the limits of the Territory there shall be inaugurated the first of those great systems eventually to come from the application of this law; that the salary of the governor of Arizona be increased to a sum commensurate with the duties required of him, or at least that the sum allowed by law as his salary shall be appropriated by the Congress; that the Indian school facilities in Arizona be increased, in order to more quickly prepare the younger generation to become self-supporting; that the appropriation for the National Guard of Arizona be increased; that the appropriation for the contingent expense of the governor's office be increased sufficiently to provide additional clerical force; that upon the admission of Arizona to statehood there be set apart, for the establishment and maintenance of a hospital for the aged and infirm miners, 150,000 acres of land from the public domain; that an appropriation be made for the improvement of the Colorado River, and the construction of a levee from the town of Yuma to the Mexican line, to prevent the overflow of cultivated land by the annual freshets; that appropriations be made for the purchase of sites and the erection of public buildings in cities in this Territory when the same can be shown to be of ultimate benefit to the General Government; that appropriate measures be taken by the Interior Department looking to the rejuvenation of the depleted forest area in this Territory, and that a system of tree and tree-seed planting be inaugurated by the division of forestry.

HAWAII.

The annual report of Hon. Sanford B. Dole, governor of the Territory of Hawaii, gives an extended account of the affairs, progress, and development of the Territory.

The population of the islands as shown by the census of 1900, was 154,201, an increase of 64,011 over that for 1890, which was taken by the Hawaiian authorities; the division of the population as to sex, nativity, and race was as follows: Males, 106,369; females, 47,632; native born, 63,231; foreign born, 90,789; foreign white, 12,749.

In 1890, there were 34,436 Hawaiians, 15,301 Chinese, and 12,360 Japanese; in 1900, the census showed 29,799 Hawaiians, 25,767 Chinese, and 61,111 Japanese, indicating a marked decrease among the Hawaiians and a very material increase among the Japanese and Chinese, due largely to the immigration of the latter. In 1900, there were 32,336 dwellings in the Territory, with an average of 4.8 persons to each, and during the same period there were 29,763 private families averaging 3.7 persons each.

The aggregate area of the public lands is stated to be 1,772,713 acres, valued approximately at $3,569,800. During the year, 97 rights of purchase lease were granted, covering 6,599.90 acres, and aggregating in value $38,880.74. Thirty-three homestead leases were granted, aggregating 136.29 acres, rights in the latter case being inalienable, no appraisements were made.

One land license was issued for the conducting of surplus water from Polipoli spring, 6,000 feet above the level of the sea, at Wailuku, Maui, to a lower level to be used at advantageous points for supplying cattle with water, and for the purpose of the development of grazing and agriculture, and will result in enhancing the value of the public lands of Kamaole, Kahikinui, and Kamaio; two cash sales covering 7.55 acres were made for the sum of $940. Thirteen general leases were issued covering periods of from five to twenty-one years, aggregating in area 53,889.80 acres, at a total annual rental of $17,460. The total receipts of the land office during the year were $116,923.18. There has been an increasing demand for small holdings. The surveys and subdivisions made during the year cover a total area of 8,000 acres, and average from 10 to 50 acres to a lot.

The forests of Hawaii generally occupy the higher elevations below the frost line, and their preservation is a matter of great moment. They contain among others a number of beautiful hard-wood trees suitable for furniture and interior finishing of houses; sandal wood and the acacia koa are found in various groups and are in large demand and bring high prices. Many kinds of deciduous trees of northern latitude have been tried in different parts of the Territory, generally without success at low elevation; it is probable, however, that experi-

ment will demonstrate that some varieties will do well at higher elevations. Extensive and destructive forest fires occurred in the district of Hamakua during the summer; the area burned over covering 30,000 acres of public and private land; with the assistance of laborers from neighboring sugar plantations and a fortunate fall of rain the conflagration was subdued.

The governor recommends that a forester connected with the Agricultural Department be detailed to study the forests and meteorological conditions with reference to rainfall, water supply, and wind exposure of the several parts of the group of islands and the necessity of foresting areas now exposed and to assist the Government in organizing a local forestry bureau. The latter would in a few years become self-supporting and eventually contribute materially to the national revenues. A forest reservation of 74,000 acres lying between Hualalai and Maunakea and northwesterly to the sea was created on the 17th of June, 1902, and it is the purpose of the Government to set aside similar forest reservations in other localities as opportunity permits.

There has been a serious increase of insects injurious to trees all over the Territory. This is attributed by experts to the alarming decrease of indigenous insectivorous birds, and to the circumstance that many of the forests have become so enfeebled by the presence of cattle and sheep, by which undergrowth is destroyed and the surface roots and lower trunks left exposed to the weather, that they become an easy prey to insect depredations. Every measure practicable will be taken to eradicate these insect pests.

Considerable progress has been made in the agricultural development of the islands. At the Government nursery alfafa, red clover, crimson clover, teosinte, sorghum, buffalo grass, blue grass, maize, and pencilleria have been cultivated, and experiments have been made with the Hawaiian and Samoan taro and yams. Yields of sugar on the irrigated plantations were 12,388 pounds per acre in 1901, an excess of 5,827 pounds over those plantations depending solely upon the rainfall. During the year 720,553,357 pounds of sugar were shipped, as against 690,879,234 pounds for the previous year, an increase of 29,674,123 pounds. The average cost of the production of a ton of sugar based upon reports from three of the largest plantations was $41.13.

Pineapple cultivation and the canning of the matured fruit is a growing one, giving promise of great development. One cannery has been established, its product of 6,200 cases being shipped to the mainland. This fruit has several varieties and a wide range of soil and elevation. Among the new industries may be enumerated the cultivation of sisal, a fiber plant suitable for cordage. Several hundred acres of sisal, which thrives in rocky and comparatively barren

soil, is in successful cultivation. The establishment of local factories for the handling of this fiber is only a question of time, adding to the Territorial products and furnishing a new demand for labor. The castor-oil bean, which has heretofore grown wild in different parts of the islands with great luxuriance, is now being cultivated with good results. Eighty acres on the island of Oahu, it is estimated, will yield 2 tons of beans to the acre. The percentage of oil obtained by hydraulic pressure is 45 per cent, and by the benzine process 55 per cent, producing 275 gallons of oil per acre, worth in San Francisco approximately $261.25.

Experiments made during the past year on one plantation in the cultivation of the vanilla bean and its preparation for the market demonstrate the suitability of the soil and the climate of the islands for its production. Tobacco has been cultivated in the islands in a desultory way for many years, but the product has never been properly cured and the question of the production of the finer grades is still unsettled. The fact that tobacco grows wild in many parts of the group of islands is an indication of the adaptability of the soil thereto, and experiments in the cultivation of high-grade Sumatra tobacco will shortly be undertaken at the agricultural station.

The commerce of the islands has been fairly satisfactory. The articles imported from foreign countries aggregated in value $3,036,583. The total value of merchandise shipped to the United States and exported to foreign countries was valued at $24,793,735, as follows: 720,553,357 pounds of raw sugar, valued at $23,920,113; 1,210,098 pounds of coffee, valued at $126,644; 342,300 pounds of rice, valued at $15,422; fresh fruits valued at $66,161; honey valued at $6,455; 1,099,763 pounds of hides, valued at $78,413; 351,418 pounds of wool, valued at $38,681, and miscellaneous merchandise valued at $541,846.

Measures have been taken for the improvement of live-stock breeding; the introduction of new pasture grasses, and the preserving and restoring of such forest growth as may be beneficial to grazing lands. There have been slaughtered for home consumption during the year, 4,998 cattle, 588 calves, and 8,352 sheep; the aggregate value being $261,116.19. The largest average weight of cattle from any ranch was 584 pounds, and the smallest, 282 pounds; the average weight of sheep, 38 pounds.

Progress in educational matters has been gratifying. The public schools of the islands are 143 in number, while the private or independent schools are 54; the total enrollment in all the schools in the Territory is 17,518. The nationality of the pupils in the schools is varied, there being no less than eleven divisions. There were 4,903 Hawaiians and 2,869 part Hawaiians, a total of 7,772 children claiming Hawaiian ancestors. There has been a very marked increase in the percentage of children of Portuguese, Japanese, Chinese, and Porto

Rican parentage. These races are mingled in school, there being no Government school devoted to any special race, and the problem of instructing them has not been an easy one.

Up to the year 1887 there were quite a number of public schools taught in the Hawaiian language. Continued petitions from the parents of pupils in these schools resulted in their gradual conversion into English schools. The last school taught in Hawaiian was changed to an English school in 1901. To instruct this heterogeneous mass of pupils the public schools employ 380 teachers and the private schools 229. This gives an average of 34 pupils to each public school teacher and an average of 19 pupils to every teacher in private schools. The work in the public schools is therefore much harder than that in the private schools. The report of the superintendent of public instruction, which accompanies the governor's report, embodies a detailed history of the schools and affords very interesting reading.

The total amount appropriated for general expenses for the fiscal year ended June 30, 1902, was $7,498,033.55, of which amount $2,159,646.99 has been drawn, leaving an unexpended balance of $5,338,386.56; the receipts for the year (embracing a balance of $75,994.97 on hand July 1, 1901, taxes, $1,658,107.09, the remainder covering funds from all other sources), was $2,473,172.81, and the expenditures $2,262,036.48, leaving a cash balance June 30, 1902, of $287,131.30. The property subject to ad valorem taxes according to assessment appraisements was, real estate, $52,823,352; personal estate, $57,565,226, aggregating $110,388,578. The total bonded indebtedness of the Territory is as follows: $1,952,600, of which $985,129.69 is to be paid by the United States Government, and the remainder, $939,970.31, by the Territory.

The fire claims commission of five persons appointed under the authority of act 15 of the session laws of 1901, being "An act to provide for the ascertainment and payment of all claims which may be made by persons whose property was destroyed by fire in the years A. D. 1899 and 1900, under orders of the board of health," began to take evidence in proof of such claims in May, 1901. The number of claims filed was 6,748, amounting in the aggregate to $3,175,132.90. All of these claims were heard and ajudicated, the aggregate of the awards amounting to $1,473,173. The legislature by its said act appropriated $1,500,000 for the payment of such claims, limiting the expenditure to $500,000 per annum, but providing no means by which the money appropriated might be obtained, except that it set apart the amount due the Territory from the Federal Government for advances made by the Territory on account of interest on that part of the Hawaiian debt assumed by the United States as a special fund for a partial payment of such claims. Such advances amount to $151,640.79, and have not as yet been returned to the Territory by the Federal Government.

In the present financial condition of the Territory it can not provide the funds necessary to the settlement of these claims, except by means of a loan, and that is not permissible under the act organizing the Territory.

The Congress having this matter brought before it late in the session, gave it such consideration as the pressure of other matters permitted, with the result that the Senate Committee on Pacific Islands and Porto Rico made a unanimous report recommending that an amendment be made to the House deficiency appropriation bill appropriating $1,000,000 for payment of a part of such awards, and authorizing the Territory of Hawaii, through the governor and secretary, to issue bonds in the sum of $500,000 for payment of the balance. The amendment was passed without opposition by the Senate, but failed to pass the House. A bill providing substantially the same relief as embodied in the Senate amendment was subsequently favorably reported by the chairman of the Senate Committee on Pacific Islands and Porto Rico.

In discussing the matter the governor states that the efforts of the government of the republic of Hawaii to suppress the plague epidemic were in the public interests of the United States. Such efforts cost $720,488.07 and large unestimated losses to the business interests of the group. The Hawaiian Islands were at that time under the control and government of the President of the United States. Immediately subsequent to the suppression of the plague the act creating the Territory of Hawaii was enacted, whereby Hawaii lost its customs revenues, worth at that time $1,200,000 per annum, or 38.7 per cent of its entire current revenues. With these important reductions of the public income the Territory is unable to meet its current expenses without borrowing; much less will it be able to pay these awards or any substantial portion of them without prejudice to the general administration of its affairs. He adds that it is important upon every consideration that the awards be paid without delay, and recommends that the Federal Government assume the whole payment thereof.

Communication between the islands of Oahu, Molokai, Lanai, Maui, and Hawaii has been established by a wireless telegraphy. The service at first was unsatisfactory, owing to lack of knowledge on the part of the operators, and subsequently broke down through defects in some of the apparatus. The difficulties, however, were successfully overcome, and the lines have been in operation since June, 1902. All messages transmitted reached their destination, though sometimes in a mutilated form. The system at the present time does not more than pay expenses, and the company has been financially assisted by the business men of Honolulu, who recognize the vital importance of the system to the business interests of the country.

The policy of the segregation of lepers on the island of Molokai was originally adopted in 1865, but was very loosely enforced up to 1886, during which time there was an apparent increase in the number

of persons afflicted with the disease. Since 1887, however, the law has been rigidly enforced, and results show that strict segregation has prevented the spread of the disease. During the year 132 suspected persons were examined, 83 were found to have the disease, 31 were doubtful cases, and 17 were discharged. The number of patients at the settlement on the 30th of June was 915. The death rate during the last decade has greatly diminished, a result due, undoubtedly, in a great measure to the general improvement of the conditions at the settlement pertaining to the comforts of life and care of the sick.

The governor recommends that an expert forester be maintained in the Territory for a sufficient time to enable him, acting with the Territorial government, to organize and establish a system for the management, conservation, and development of Hawaiian forests;

That the payment of the full amount of the awards made by the fire claims commission be assumed by the United States; or, in the alternative, the Territory of Hawaii being under conditions differing from those of any other Territory of the United States and carrying on at its own expense a system of light-houses, the dredging of harbors, and the maintenance of buoys, duties usually performed by the Federal Government, and the expenses of these enterprises, together with the payment of the aforementioned awards when taken with the loss of the tariff revenues formerly enjoyed by Hawaii, amounting at the time of the inception of the Territory to about $1,200,000, being too great for the Territory to assume, that the customs receipts collected at the ports of the Hawaiian Islands be paid to the treasury of the Territory;

That the payment of taxes for the year previous to a regular election for Delegate to Congress and senators and representatives of the local legislature, and before the end of such year, be made a prerequisite to registration for voting at such election, except as to such taxes as may be in litigation;

That a Federal building for the accommodation of the Federal court, post-office, and revenue officials be erected in Honolulu;

That a building or buildings for the accommodation of the Federal court, custom-house, and post-office be erected in Hilo;

That light-houses be erected at Honolulu Harbor, Oahu, Makapuu Point, Oahu, Kahului, Maui, Ouna, Kailua, Kawaihae, and Mahukonu, Hawaii; and Kalaeokalaau, Molokai; and that the Federal Government assume the management of all Hawaiian light-houses;

That the Federal Government assume the care of all Hawaiian harbors and the work of improving the same;

That a breakwater be constructed for the protection and improvement of Hilo Harbor, Hawaii;

That the Hawaiian silver coins be received in exchange for United States silver coins of like respective denominations;

That a limited immigration of Chinese laborers be permitted, conditioned upon their engaging in agricultural work for hire only during their stay in the Territory and subject to deportation at their own expense upon their ceasing to do so;

That legislation be enacted placing in the executive of the Territory authority to dispose of the waters belonging to the public lands, by lease or license;

That section 80 of the "act to provide a government for the Territory of Hawaii" be amended so that the governor may suspend any officer in regard to the removal of whom the advice and consent of the Senate is necessary, until the next succeeding session of the Senate, and may, except in case of the auditor, appoint a person to fill the office in question pro tempore until the matter of the removal of the suspended officer is settled, or may remove any of such officers. That the tenure of office of Inspectors of Election be fixed at two years instead of four, as now provided by the organic Act, section 80, and that the Governor be empowered to remove them from office at his discretion.

New Mexico.

The annual report of the governor, Miguel A. Otero, shows material progress in all branches of industry in the Territory and embodies detailed statements from all county and Territorial offices.

The population of the Territory, according to the last census, was 195,310. The estimated population on the 30th day of June, 1902, based upon a comparison of registration returns, the vote cast at elections and the last annual school census, is 246,700, of which 12,700 are Indians.

The financial standing of the Territory is stated as excellent. Under beneficent acts of recent legislative assemblies it has been possible to accumulate a surplus in almost every fund in the treasury, enabling all obligations to be promptly met, leaving a handsome surplus to be used in the reduction of the interest-bearing debt.

The bonded debt on June 1, 1901, was $1,180,900, on which there was paid during the past year $57,600; the bonded debt outstanding June 1, 1902, was $1,123,300. Since that time sinking funds have accumulated sufficient for the redemption of the bonded debt in the sum of $89,246.26, leaving the net bonded indebtedness at this time $1,034,053.74. For more than a year past, it is stated, endeavors have been made by the Territory to buy unmatured bonds without success. Many orders have been filed to take up any bonds the Territory might issue, and there has been a wide demand for county and school-district bonds. The Territorial tax levy for all purposes is now 13.99 mills, far below the average in the Western States.

The banking institutions are in a flourishing condition. There are 14 national banks in the Territory, an increase of 4 during the past

year, one located at Raton and the others at the new towns or Portales, Santa Rosa, and Tucumara. In addition there are 12 banks operating under the Territorial laws, a total of 26 banking institutions, having resources aggregating nearly $10,000,000, with deposits of over $7,500,000.

In the line of industrial development, the governor states that as large and as many as were the charters filed in New Mexico for various industrial enterprises during the fiscal year ending June 30, 1901, that record is exceeded by that for the fiscal year ending June 30, 1902, which shows the several corporations chartered to number 205, with a total capitalization of $100,480,130. Of the corporations so organized 110 were for the purpose of mining, milling, and smelting, having a combined capitalization of $73,017,630; 63 for manufacturing and other industrial pursuits, with a capitalization of $4,796,500; 6 bank, building, and loan associations, with a capital of $4,830,000; 6 railway companies, with a capital of $15,825,000 to construct 834 miles of new road; 10 irrigation and land improvement companies, with a capitalization of $2,011,000, and 10 benevolent and charitable associations. Last year there was a gain of 41 in the number of industrial corporations filed over the previous year; this year the gain is 55 in number, which measures to some extent the great forward strides New Mexico is taking.

One million one hundred and twelve thousand five hundred and fifty-one and fifty-four hundredths acres of the public domain have been entered under the homestead and various Government land laws, two-thirds of the area thus taken up being in the counties of Colfax, Union, Guadalupe, Santa Fe, Lincoln, Chaves, and Otero, contiguous to the new lines of railroad.

The Court of Private Land Claims during the year has judicially considered land covering a large area and now has pending cases involving only 141,760.97 acres. Since the organization of this court it has adjudicated title to 24,000,000 acres of land claimed under various grants, all of which, save something more than a million acres, has been determined to be public land and restored to the public domain.

Under the act of Congress, June 21, 1898, donating a limited area of the public lands to the benefit of the Territory for educational and other worthy purposes, the United States Commission has selected, located, and entered for the benefit of the various institutions, etc., 820,026.58 acres, including 79,693.25 acres of saline lands. This act of Congress also appropriated 50,000 acres each to the following institutions which have not yet been established, viz, the miners' hospital, institute for the blind, and the reform school. It will devolve upon the next legislative assembly to pass necessary laws establishing and locating these meritorious public institutions.

It was tardy justice, the governor says, which brought New Mexico

this small concession of the public domain, which is as nothing when compared with the vast area of Government lands within the Territory, and in view of present urgent needs for utilizing every possible available resource for advancing the Territory's educational development, he urges that an additional grant of public lands be made to New Mexico. There are more than 50,000,000 acres of the public domain within the borders of this Territory and the area has been largely increased of late years through the operations of the United States Court of Private Land Claims.

In view of the large area reverting to the public domain by reason of the adjustment of titles by the land court, it is also recommended that the Government provide some means for having this class of public lands immediately surveyed and subdivided, to the end that the school sections therein shall be available at once for leasing purposes under the law above referred to, thus greatly enhancing the benefits derived by the public schools of New Mexico through this Congressional donation. At the present time a great many applications for the lease of such school sections can not be taken up by the land commissioner because these former grants have not been surveyed and subdivided.

Coincident with the development of the industrial affairs in the Territory, the governor states that great advances have been made along educational lines. He states that before 1850 New Mexico had been an outlying province of the Kingdom of Spain and the Republic of Mexico, neglected and uncared for by either Government, compelled to depend upon herself and her own resources, to contend against an arid climate, while at the same time carrying on war continuously for more than a quarter of a century with savage Indians within her borders. Naturally the cause of popular education suffered much, being at times entirely suspended in all save a few of the more populous communities. But after repeated appeals, covering a period of more than forty years, Congress, in 1898, passed an act donating to the Territory lands for various public institutions, and sections 16 and 36 for the benefit of the public schools. Long prior to that, however, the people of the Territory had taken the subject in hand and by legislative enactment provided an excellent system of public school laws, supported by a heavier direct tax than was ever laid in any State or Territory for the purpose, viz, 3 mills on the dollar. These laws have been materially improved from time to time, until now New Mexico has an educational system that appeals to the pride of every citizen.

Briefly summarized, the school statistics are as follows: School population, 62,864; increase over previous year, 9,856, or 18.6 per cent. Enrollment of pupils in all schools, 42,925; average daily attendance, 29,825. Number of schools, 726; teachers employed, 1,046. Number of higher territorial institutions, 7; city high schools, 7; kindergartens,

4; private schools, 6. The average number of months taught in all schools, 7.35. Total salary paid teachers, $412,340.28; annual receipts, $838,018.70; annual expenditures, $723,048.32; total value of school property, $2,071,702.25. Enrollment of public schools proper: Year 1899, 21,761; 1900, 31,519; 1901, 35,227; in city schools, 7,243; in rural schools, 27,984; in higher Territorial institutions, 907. Expended in improvements on public-school property during the year, $242,617.60. Average monthly salary paid teachers in all schools, $54.21. Average annual cost of educating pupils in all schools, $17.07. Average monthly salary paid teachers in higher institutions, $103.56. Average annual cost of educating pupils in higher educational institutions, $159.66.

The general interest among the people in the public schools is constantly growing as the good work accomplished by them is seen and appreciated. The educational association of the Territory is a great factor in this respect.

In his report to the governor, the superintendent of public instruction asserts that New Mexico is now raising by direct taxation of her people more money per capita for educational purposes than any State in the Union, and it is claimed that the ratio of illiteracy has been steadily reduced during the past few years until now less than 18 per cent of the population are unable to read and write, and 92 per cent of the people now speak the English language.

During the past two years charters for many new railroad corporations have been filed with the Territorial secretary, the capitalization of which amounts in the aggregate to $32,386,500. Charters filed during the past year call for the construction of 834 miles of new road and actual construction work is now in progress upon more than one-half of this new mileage. The total railway mileage of New Mexico is now over 3,000 miles, with every indication that it will amount to nearly 4,000 miles before the close of another year.

Following the lines of this railroad development in particular, a healthy flow of immigration has poured into the Territory during the past year, composed largely of residents of the central Western and Northern States in search of new homes, and of mining men from the colder regions of the north. As a result many new towns have sprung into life, and new mining camps established which are growing at a healthy rate and will serve to add very materially to the taxable property of the Territory.

The improved systems of irrigation upon which New Mexico has to depend for the multiplication of her useful land area are developing rapidly. More than 3,000 miles of irrigation ditches are now in operation in the Territory, the cost of which has been over $6,000,000. Since the grant of public lands by Congress the Territorial legislature has wisely encouraged this class of enterprises by giving special privileges to persons or corporations undertaking the reclamation of Ter-

ritorial lands in tracts in any quantity up to 50,000 acres, and ten such enterprises are now in hand which contemplate the bringing under ditch of 261,000 acres of land. Individual enterprise is also increasing the local supplies by the erection of multitudes of windmills, pumping from artesian wells in various parts of the Territory. These prove the existence of great bodies of water underlying a large portion of the Territory. To the settler this means much, and will add in a great measure to the future possibilities of production.

An exhaustive article, or rather series of articles, on this method of water development appears in the governor's report and indicates that the most extraordinary progress has been made in this direction during the past year, showing that a very large area has thus been brought under cultivation which hitherto was deemed of little value as farm land because of the lack of available surface water. It is stated also that true flowing artesian wells have thus far been discovered in five widely separated districts in New Mexico, and such discovery is proving a highly important factor in the settlement and development of the country by the farmers and fruit growers. In one district alone 125,000 acres are now supplied with irrigation from artesian wells. The action of Congress in enacting the national irrigation law is commended.

The live-stock industry is flourishing. Grass and water are abundant despite the late coming of the annual summer rains, and the outlook for the fall and winter season is propitious. During the year 133,835 head of cattle were inspected for removal from the Territory, and the revenues derived by beef raisers from such shipments were in the neighborhood of $3,000,000. There are 1,246,237 head of beef cattle in the Territory. The wool clip has passed the 20,000,000-pound mark per annum and it is selling at exceptionally good figures. The lamb crop in the spring was in the neighborhood of 1,000,000 head, and there are at present on the ranges of New Mexico nearly 5,000,000 head of sheep. Shipments for the year were 406,908 head, which were sold at prices ranging as high as 3½ cents per pound, and netting the grower as high as $2.40 per head. The Angora-goat industry is enjoying great prosperity. At a conservative estimate the live stock now on the ranges of New Mexico has a value of $40,000,000.

Mining for the useful and precious metals has been extremely active throughout the Territory during the year, and a very large area of coal, iron, and oil bearing lands has passed to private ownership, with energetic operations inaugurated for their development. Oil-drill rigs are now at work in five or six different districts, with every promise that New Mexico will become a producer of merchantable oil before many months. Several new and important coal camps contiguous to the new lines of railroad have been established, and quite a number of notable gold and copper strikes have been made. The coal and coke

industry gives employment to some 2,000 persons, and the machinery and operating plants are valued at $715,000. The net output for the coal mines for the year was 1,102,046 tons, valued at the mines at $1,609,898.90. Coke production for the year amounted to 25,012 tons, valued at $58,207. Of gold, silver, lead, and copper, the Territorial product for the past year is estimated at between six and seven million dollars, and the value of the turquoise mined in New Mexico is in the neighborhood of $138,000.

The important industries at present are the smelting of copper and lead ores, with a product valued at nearly $1,000,000 a year; flour milling, with a product valued at $551,108; the scouring of wool, with $77,875 as the receipts for last year's work. Flour and grist mills number about twenty, and there are numerous fruit canneries, distilleries and wineries in operation. There are 31 sawmills in the Territory, with an invested capital of $160,798, employing 243 men, earning $80,851 per year, whose annual product is worth $290,527. Of mills sawing 50,000 to 500,000 feet per year there are 13; of mills sawing 500,000 to 1,000,000 feet per year there are 4; of mills sawing 1,000,000 to 5,000,000 feet per year, there are 14. There are 13 planing mills, employing 41 people, who earn $18,291 annually, and who produce $75,050 worth of material per year.

The number of Indians in the Territory is 12,700, and considerable progress has been made by them toward civilization. There are 33 schools devoted solely to the training of the Indian youth, in which 2,183 people were enrolled, with a daily average attendance of 2,114. The cost of maintaining these schools is $252,087, and the total value of the school property in the Territory is $351,000. Special attention is directed to the efforts of the Department toward supplying the Pueblo Indians with irrigation facilities.

An interesting chapter in the report is devoted to the thermal springs of New Mexico, of which there are a great variety, both hot and cold, in many sections of the Territory. Much space is also given to the public health, the remarkable salubrity of the climate, and its effects upon tuberculosis and kindred diseases. The fact that the Government has officially recognized the superiority of the Territory's natural climatic conditions by establishing Government sanitariums for the sick of its military and marine branches at Forts Bayard and Stanton, respectively, is referred to in commendatory terms, and a technical review of the results thus far accomplished is given. Several large private sanitariums are conducted at various points throughout the Territory, and many recoveries of patients suffering from consumption, through the effects of the pure air, altitude, and sunshine, without the use of medicine or drugs, are reported.

Detailed reports are given of the status of the various eleemosynary institutions of the Territory, which show New Mexico to be in this

respect fully abreast of the spirit of the times. The moral and social status of the Territory is reported as excellent, and the vast amount of data presented regarding the operations of the judicial branch of the Territorial government indicates the general good order prevailing throughout the year and the utmost security of life and property in this Territory under the present administration of public affairs.

In discussing the question of statehood the governor, in part, states:

> To those who critically scan the pages of this official report, outlining as it does the past year's progress of the Territory, its present status in all things that combine to make great States, its growth and development, we earnestly make appeal for aid in securing to New Mexico the boon of statehood at the hands of Congress.
>
> It is fifty-six years since this Territory was acquired by conquest, and fifty-four years since it was formally annexed by treaty. During all this time it has remained a Territory. Prior to the advent of the railroads and the introduction and maintenance of the public school system it is an admitted fact that New Mexico was not prepared for statehood. But that is not the case now. Within the last decade the Territory has made wonderful progress in all the elements that constitute good American citizenship, as well as in material wealth. An intelligent and broad sentiment rules the Territory, and will take an honest pride in rendering New Mexico one of the most substantial and progressive of American States. It is a duty due the people of the Territory that they be admitted to the rights and privileges of statehood. To hold them longer in the Territorial vassalage will be a crime against American institutions.

The question of the admission of the Territory as a State is one wholly within the jurisdiction of Congress and this Department can do no more than direct your attention to the views of the governor in the premises.

OKLAHOMA.

The annual report of the governor, Thompson B. Ferguson, is a comprehensive presentation of the growth, progress, and resources of the Territory. The area of the Territory is approximately 38,830 square miles. Geographically it is a Southern country; the habits and occupations of the people, however, are more like those of the North. The climate closely resembles that of Tennessee, and the agricultural products are similar to those of southern Kansas. The soil in most portions is a rich red, very productive, prairie predominating, although there is a vast amount of valley and river bottom land that is unsurpassed in richness. The population as ascertained by the census of 1900 is 398,331; the assessor's returns of the different counties of the Territory for the past year fixes the population at 541,480, a gain over the returns of the year 1901 of 143,149 or nearly 36 per cent. This enumeration indicates an average of 14 persons to the square mile of territory.

In 1901 the lands now embraced in the counties of Kiowa, Caddo, and Comanche were opened to settlement. These three counties have now a combined population of 73,833, embracing persons from every

State in the Union, as well as from some foreign countries. The people in the Territory are essentially American, the per cent of foreign born, according to the census of 1900, being but 4 per cent. They are also intelligent and well educated, the percentage of illiteracy being only 5½ per cent. This, the governor states, compares well with the Northern and Eastern States, and is much lower than any other Commonwealth in the same latitude.

The value of property as returned for taxation for 1902 was: Farm lands, $22,614,650; town property, $11,629,199; railroads, $6,339,462; moneys and credit, $3,068,273; other property, $29,025,839, aggregating $72,677,423, indicating, as compared with the tax valuation of $60,464,696 for 1901, an increase of $12,212,727.

With a Territorial tax levy this year of 7$\frac{15}{20}$ mills, as compared with 7½ mills last year, the total amount of Territorial revenue will be $566,950.90 for 1902. This is an increase of revenue of $113,398.69 over 1901.

The amount of cash in the Territorial treasury to the credit of several funds aggregated $542,370.87, of which $403,902.17 was on deposit with the Capital National Bank Territorial depositary, and $138,468.70 with the Guthrie National Bank, also a Territorial depository. The indebtedness of the Territory during that period was $466,950.43, which is only about 85 cents per capita. This amount includes the bonds issued for educational purposes some years ago, aggregating in value $48,000. The condition of the revenues of the Territory, however, is such that these bonds will be redeemed at an early day.

Three million sixty-eight thousand five hundred and two acres of land were filed upon during the year, of which 606,109.98 acres were homestead entries made by 4,007 different persons. The vacant Government land aggregates 3,777,883 acres, of which over 3,000,000 are located in Beaver County. The greater portion of this land is best adapted to grazing, although there are many localities suitable for agriculture. Two million and fifty-five thousand acres of land, set aside by Congress for Territorial purposes, are now under lease, the income therefrom amounting in the aggregate to $300,000. Under the present system the lessee is guaranteed renewal of the lease on its expiration for another term without competition. The rentals are not excessive, and the leaseholds are generally regarded as valuable property. The net proceeds from land leases during the year was $435,915.85.

Education in Oklahoma is general, and the educational advancement of the people has been phenomenal. The public school system, which embraces rural districts, consists of primary and intermediate grades; the secondary school, including the high school and the university preparatory school; the normal schools, the agricultural and mechanical college, and the university.

The schools, the governor states, are well housed. From the very beginning the settlers had an ambition to build schoolhouses. The only Territorial bonds ever issued were issued to build Territorial schools. Almost the only bonds issued by the municipal organizations have been for the same purpose. Even in the new country over 100 schoolhouses have been built. Most of them are good, substantial structures and are ornaments to the country.

There were taught during the year 2,278 schools, with an aggregate enrollment of 116,971 and an average daily attendance of 62,798. The number of teachers employed aggregated 2,593, to whom there was paid as salaries $502,277.65; 217 schoolhouses were erected at a cost of $131,958.72; 1,802 pupils were graduated from the common schools. There was apportioned among the various counties as a territorial school fund, $267,105.14. The Territory offers the best educational advantages through her several higher institutions of learning, not only to her own students, but to those in the Indian Territory as well. There is a university located at Norman, two normal institutions at Alva and Edmond, an agricultural and mechanical college at Stillwater, an agricultural and normal university for colored students at Langston, and a university preparatory school at Tonkawa. Besides the institutions of learning indicated, there are many sectarian and private schools and colleges. The Government maintains an industrial school for Indians at Chilocco and the following-named boarding schools: Absentee, Arapaho, Cheyenne, Fort Sill, Kaw, Osage, Otoe, Pawnee, Ponca, Rainy Mountain, Cantonment, Red Moon, Riverside, Sauk and Fox, and Seger.

Certain religious denominations maintain, in addition to the Government schools, the following missions: St. Patrick's (Catholic), Mary Gregory Memorial (Presbyterian), Cache Creek (Reform Presbyterian), and Methvin (Methodist Episcopal South).

At the present time there is but one county in Oklahoma that has no railroad. The following lines of railroad are now in operation in the Territory: Atchison, Topeka and Santa Fe, Chicago, Rock Island and Pacific, Choctaw, Oklahoma and Gulf, Blackwell, Enid and Southwestern, Kansas City, Mexico and Orient, and St. Louis and San Francisco.

The following are being built, and will doubtless be in operation in the near future: Missouri, Kansas and Oklahoma, Denver, Enid and Gulf, Arkansas Valley and Western, Fort Smith and Western, and Guthrie, Shawnee and Colgate.

The railway mileage, as returned for taxation in March, was 1,413.23 miles of main track and 178.55 miles of side track.

Fully 500 miles of railway have been built in the Territory during the past year. Much is under construction, and more miles will be

completed within the next twelve months than ever before in the history of the Territory.

There were shipped from the Territory 6,442 carloads of cattle, 18,593 carloads of wheat, 210 carloads of corn, 308 carloads of oats, 65 carloads of castor beans, 2,252 carloads of hogs, 709 carloads of cotton seed, 1,209 carloads of hay, 4,842 carloads of flour, 391 carloads of horses and mules, 1,846 carloads of other mill stuffs, and 164,653 bales of cotton.

There were shipped into the Territory 1,091 carloads of farm machinery, 237 carloads of vehicles, 1,862 carloads of flour, 2,883 carloads of emigrant goods, and 7,225 carloads of coal.

The above does not include shipments into the Territory by the Choctaw Railroad.

Oklahoma annually exports thousands of carloads of wheat and flour to the markets of Europe and South America, much of it going by the direct route via Galveston rather than the long haul to the Atlantic seaboard.

Vegetation of every character thrives luxuriantly, and abundantly repays cultivation. The leading crops of both the North and the South grow here side by side in perfection, thus evidencing the perfect adaptability of our soil and climate to the growth of corn and cotton, wheat and tobacco, oats and castor beans, rye and sugar cane.

The agricultural experiment station has continued and developed the work of investigation of agricultural matters committed to it. The unusual conditions incident to a dry season were utilized in the making of investigations having a bearing on overcoming the effects of the drought and using the short crops of feed and forage to best advantage. Field experiments are being carried out with various products, and animal diseases studied by the station. Four bulletins and the annual report were issued during the year, in editions of 20,000 copies of each, and distributed to Oklahoma and Indian Territory farmers and to those residing elsewhere who request them.

The largest acreage of the Territory is devoted to the production of wheat, the winter variety being generally raised, the yield being from 25 to 45 bushels to the acre.

The acreage devoted to corn is very nearly as large as that sown to wheat; grain tests well, 62 to 64 pounds to the bushel not being unusual.

Improved farms are in demand in Oklahoma. The large number of real estate transfers at prices ranging from $5 to $40 per acre, with an average of $16.49, shows a meritorious appreciation of values. There was listed for taxation 6,344,662 acres of farm land, an increase of 1,792,815 acres over 1901.

Oklahoma was primarily a stock-raising country. Its vast prairies

covered with abundance of nutritious grass, its streams of pure water lined with forests, made it an ideal pasture land for the stockmen who flourished in those days. The large stock ranches have been pushed farther and farther west as the homesteader has filed on and fenced in his claim. Stock raising is now principally confined to small ranches and ordinary farms, and as the result of breeding from thoroughbreds larger and better stock will usually be found.

There were returned for taxation in 1902, 280,939 horses; 58,143 mules and asses; 959,816 cattle; 38,308 sheep and goats, and 189,218 swine.

The prevention of disease among cattle is under the special supervision of a board of live-stock sanitary commissioners. It is their duty to enforce all sanitary laws intended to prevent the spread of and to eradicate infectious diseases among domestic animals. They have met with gratifying success, working through a corps of efficient inspectors, in preventing to a large extent the ravages of Texas fever.

The governor states that if there is an idle man in Oklahoma it is from choice rather than necessity. The enormous amount of railroad building during the past year has given steady employment to hundreds of men, many of whom had to be imported from the North and East. Farm labor is in demand the year around. The settlement of the new country created a demand for sod breaking and general farm work that could not be supplied, and hence many claim holders were unable to get their lands into cultivation this year. The increase of manufacturing industries, together with the general rush of building throughout the country and cities of the Territory, continually drain the labor supply, even with the ever increasing flow of immigration. The wages paid are equal to or even greater than those of any State in the Union.

There has been a phenomenal growth in the banking business during the year; the number of national banks has increased from 31 to 60 and the Territorial from 113 to 152.

The establishment of so many new towns in the country opened to settlement a year ago necessitated proper business facilities, and in many instances the bank preceded the post-office. The continued and unusual prosperity in Oklahoma makes it an inviting field for the banker and capitalist.

There have been 4 building and loan associations chartered during the past year, making a total of 10 home institutions doing business in the Territory; there are also several associations incorporated in adjoining States but operating in the Territory through agents.

There is now in the public fund of the Territorial treasury $205,162.95, which is being annually increased by the additions from rentals of land granted to the Territory for building purposes; the public buildings which are most needed at present by the Territory are an insane asylum, deaf mute school, blind asylum, reform school,

and penitentiary. The Territory, however, is powerless to locate or erect any public buildings, in view of the fact that Congress has, by legislative act, prohibited the exercise of that power by the Territory. This should be remedied at an early day.

While Oklahoma is generally looked upon as an agricultural and stock country, yet the cities have grown to such proportions that they are not without manufacturing industries, many of which will compare favorably with like establishments of older and larger cities. There are 231 manufacturing establishments employing 3,051 hands, and 135 wholesale establishments employing 959 hands. There are in the Territory 228 elevators, having a combined capacity of 2,857,000 bushels, and 48 flouring mills, having an aggregate daily capacity of 8,760 barrels.

There are 20 cities of the first class in the Territory, 5 having been incorporated during the past year. Assessed value of town property is $11,629,198. During the past year there have been erected in the cities and towns 734 business buildings, and 141 are now in course of construction; 3,862 residences have been erected, and 552 are in course of construction.

There have been completed 7 waterworks systems, 3 electric-light plants, 6 school buildings, 11 churches, many miles of street grading and paving, and several court-houses and telephone exchanges.

Forty-three fire and tornado insurance companies wrote $34,977,797 of insurance, collected $556,251.34, and paid $169,113.47 in losses.

Twenty-one life insurance companies licensed to do business in the Territory wrote $5,635,993.09 of insurance in 1901, collected $280,657.25, and paid $62,484.51 in losses.

There was also $12,898,052.37 of miscellaneous insurance written by fidelity, accident, and casualty companies, upon which was collected $165,115.59 and $116,725.15 paid.

Seventeen fraternal insurance companies wrote $11,172,650, collected $114,840.50 in assessments, and paid $88,767.82 in losses.

The various churches in the Territory have a membership of over 86,000, and the value of church property is given as $912,824.

The business of the courts has always been transacted as expeditiously as possible, but the increase in population necessitated the increase in the number of districts from 5 to 7.

There were docketed 4,978 cases during the year, and 3,940 were disposed of. The total number of cases on the docket June 30, 1902 was 3,888.

In discussing the question of statehood the governor reports that in his judgment Oklahoma is in every respect qualified to take a place among the States of the Union; that in population, wealth, and education it is eminently fitted for immediate statehood, and that no reasonable argument can be made against such action, while the Terri-

tory has a vast array of logical arguments in favor of its early admission.

The question of the admission of the Territory as a State is one wholly within the jurisdiction of Congress, and this Department can do no more than direct your attention to the views of the governor in the premises.

Porto Rico.

Commissioner of the interior for Porto Rico.—Section 24 of the act of Congress approved April 12, 1900, entitled "An act temporarily to provide revenues and a civil government for Porto Rico, and for other purposes," provides as follows:

> That the commissioner of the interior shall superintend all works of a public nature, and shall have charge of all public buildings, grounds, and lands, except those belonging to the United States, and shall execute such requirements as may be imposed by law with respect thereto, and shall perform such other duties as may be prescribed by law, and make such reports through the governor to the Secretary of the Interior of the United States as he may require, which shall annually be transmitted to Congress.

The report of the commissioner of the interior for Porto Rico succinctly states the condition of the work in the island under his supervision. During the year the legislative assembly has added to his duties the control of the bureau of docks and harbors, for the proper enforcement of harbor regulations, the collection of fees and fines, and the improvement of the island ports. This bureau has been organized under conditions that promise well for its future success, and is destined to grow in importance and value as the commerce of the island increases in volume.

The Congress, on July 1, 1902, passed an act which authorized the President to make, within one year after the approval of the act, such reservation of public lands and buildings belonging to the United States in the island of Porto Rico for military, naval, light-house, marine hospital, post-offices, custom-houses, United States courts, and other public purposes as he may deem necessary, and providing that all remaining public lands and buildings, not including harbor areas and navigable streams and bodies of water and the submerged lands underlying the same, be granted to the government of Porto Rico, to be held or disposed of for the use and benefit of the people of said island.

The enactment of this law, it is stated, gave great satisfaction to the people of Porto Rico, both on account of the evidence it offered of the continuation of a liberal policy toward the island, and as presenting the means for a just and speedy solution of all matters relating to public lands and buildings. All the properties involved have been carefully located, described, and the history of each noted, and the several Departments of the Federal Government have been asked to

express their wishes concerning the lands at present occupied by or needed for their accommodation.

The key to prosperity in the island is good roads and bridges; road building, however, in Porto Rico is not an easy task nor a project to be quickly performed. The mountainous character of the interior makes the location of roads difficult and their construction costly and slow. Sudden and torrential rains cause great landslides, ruinous washouts, and vexatious destruction of bridges, and culverts are of frequent occurrence. Every road, therefore, becomes a problem in itself, experience in another locality counting for but little in its construction.

At the last session the legislative assembly abolished the board of public works, providing for the organization of a bureau of public roads in lieu thereof. It divided the island into 7 road districts, and set aside 25 per cent of the municipal taxes for the construction and repair of roads, applying it directly to country roads and trails not immediately in charge of the insular authorities. A wise and economical expenditure of the revenues obtained for this purpose will prove of great benefit to interior communities. Four hundred and twenty-four and ten one-hundredths kilometers of macadam roads were maintained and cared for. Of this, 284 kilometers were constructed by the Spanish Government and 140 by this Government. Over 20,000 men in addition to the regular force of the office and a large number in the employ of road contractors were engaged in road work as laborers.

Of the 27 public buildings, for which special appropriation has been made, only 14 were taken charge of and more or less repaired; the remainder were principally custom-houses. As to these, the United States customs service claimed jurisdiction, and hesitated to accept insular assistance. Six hundred and twenty-eight thousand six hundred and eighty-seven dollars and eighty-two cents were expended in the management of the bureau of public works and the construction and repair of roads, bridges, and public buildings.

In accordance with the Spanish laws for public works, which are still in force, the commissioner of the interior exercises supervision over works of a public nature to be constructed under franchises or concessions granted to private corporations and by municipalities, which supervision embraces examination and approval of plans and projects and the inspection of the works while under construction. Action was taken on the following franchises:

Franchise granting W. S. H. Lothrop the right to establish and run an electric street railway in the city of Ponce and between Ponce and Ponce Playa, dated February 27, 1901. Plans were submitted and approved. Work began May 27, 1901, and the line to the Playa was opened to the public in May, 1902. That through the city is still under construction.

Franchise granted the Guanica Land Company to use certain waters for the purpose of irrigation, to construct a wharf in Guanica Bay, and to construct and operate a private railway along certain portions of the harbor of Guanica, dated March 19,

1901. Plans for the wharf were submitted and approved, and the wharf has been constructed. No other plans have been submitted.

Franchise granted the "Compania de los Ferrocarriles de Puerto Rico" the right to construct a spur, or branch track, not to exceed 80 meters in length, upon the Ponce main road, dated May 15, 1902. This track was laid and inspected under supervision from this bureau.

Gratifying improvement is shown in all matters relating to the health, comfort, and convenience of the people. The record of vital statistics accompanying the report shows a marked decrease in the number of deaths and freedom from epidemics of all kinds.

The agricultural development of the island has been satisfactory. In 1901 the area of the sugar-cane fields amounted to 91,000 acres and the crop produced was, approximately, 95,850 tons. It is estimated that the crop for the present year will be 105,000 tons of sugar. With the establishment of some large new factories the plantations are considerably increasing, and it is expected that within a few years the sugar product of the island will be twice as much as at present.

The area covered at present by producing coffee trees aggregates, approximately, 166,000 acres, yielding annually an average of 24,230 tons. The work of restoring these groves, which suffered greatly from a hurricane in 1899, has made substantial progress and it is anticipated that if the weather is favorable the next crop will not be far from the average amount above mentioned.

The tobacco crop was considerably increased in 1901 and aggregated, approximately, 4,000 tons. For the crop which is still being reaped plantations were extended over districts in which it had never been before grown, as far as seed was available and there was possible transportation. The present crop, it is expected, will be the largest the island has ever known.

Plantains, bananas, sweet potatoes, corn, rice, beans, peas, and minor fruits yielded good crops. Many orange and other fruit trees have been planted and are now doing well.

During the year 52 applications for mining concessions were considered, 30 granted, 14 canceled, and 1 withdrawn, leaving 7 pending on the 30th of June, 1902. There are at present 80 concessions for iron, copper, gold, salt, and other minerals in force. With the exception, however, of one or two gold placers and salt works, the concessions are not in operation. The rent accruing to the insular treasury from these concessions amounted to $3,589.70. The work performed on some gold placers in Corozal has not shown that they are rich enough to be worked, but the prospectors are not discouraged. Deposits of valuable iron ore have been discovered. This ore is of the first quality, and exists in large quantities. Some copper and lead ore of good quality have been located, but investigations have not yet been made to ascertain the extent of such deposits.

Eleven hundred and seventy kilometers of telegraph line were

operated by the bureau of insular telegraph, of which 140 kilometers was new wire fixed in place during the year. Twenty-nine offices were necessary to properly handle the business.

The matter of establishing communication between Porto Rico and the outlying island of Vieques was given considerable study. A system of visual signaling was finally determined upon and established in June, terminal stations being located at Isabel II, Vieques, and at Fajardo light, connecting the latter named place with the insular telegraph land lines. The instruments used for transmission of messages by night are known as acetylene flash lanterns. The instrument used for transmission of messages by day is the heliograph, of the pattern used by the United States Signal Corps.

To meet the prospective demands for operators as the bureau extends its mileage of lines, a school has been established for girls wherein they can be taught the art of telegraphy. The fact that this step met with favor is attested by the numerous applications received for admission to the school from young ladies from all parts of the island. The school opened on the 30th of June, 1902, with an attendance of 25, that being the greatest number of students the rooms available for the purpose would accommodate.

Commercial messages handled over the insular telegraph lines during the year aggregated 192,028, the cash receipts therefrom was $23,054.07, an increase of $2,075.37 over the previous year.

Appended to the report are detailed statements from the superintendent of public works, the president of the superior board of health, chief of the bureau of agriculture and mines, and of the superintendent of the bureau of insular telegraph.

Commissioner of education for Porto Rico.—Section 25 of the act of Congress approved April 12, 1900, entitled "An act temporarily to provide revenues and a civil government for Porto Rico, and for other purposes," provides as follows:

> That the commissioner of education shall superintend public instruction throughout Porto Rico, and all disbursements on account thereof must be approved by him; and he shall perform such other duties as may be prescribed by law, and make such reports through the governor as may be required by the Commissioner of Education of the United States, which shall annually be transmitted to Congress.

The report of Dr. Samuel McCune Lindsay, commissioner of education for Porto Rico, is a very full presentation of the status of education in the island. The scholastic year 1901–1902 commenced September 30, 1901, with 780 schools open, 32,302 pupils enrolled, and 829 teachers, and terminated June 30, 1902, with 874 schools open, 40,993 pupils enrolled, and 923 teachers, indicating an increase of 19.2 per cent in the number of schools, 21.2 per cent in pupils, and 20.2 in teachers. The enrollment varies; it reached 42,187 in the spring of 1902; 59,096 different children were in the schools at some time during

the year. To this figure should be further added 2,767 pupils enrolled in the high, normal, and special schools, making a grand total of 61,863 pupils in all grades of schools during the year, or 19.2 per cent of the population of school age, and 6.5 per cent of the total population of the island. The average daily attendance was 30,160, or 79.71 per cent of the enrollment; the per cent of colored pupils in the total enrollment was 29, while the colored teachers were 8 per cent of the total teaching force. The total number of American teachers employed during the year was 102 out of a general total of 938. It is interesting to note that the male teachers constituted 64 per cent of the entire body of teachers.

The estimated value of the insular school buildings is $229,000; at the end of the year there were 631 school buildings in use, 126 in towns and 487 rural. The average cost of schools per pupil enrolled was $9.42, and per pupil attending $14.12. Colored and white children attend the same schools.

The insular department of education has built a number of one-room frame agricultural or rural schools throughout the island, costing on an average $1,667.67 each, and will continue to replace the old unsuitable buildings by those of its own design; the photographs accompanying the report amply show the difference between the old and the new. Other buildings, both frame and of brick, for graded schools, from two to ten rooms each, have been built in the various towns; they number 17, and cost about $140,000, exclusive of plans and supervision.

In addition to the foregoing, one large normal school building has been completed and 38 public schools, the expenses being taken from an allotment of $250,000, of which $25,000 has been reserved for the purpose of building and equipping an industrial school in Ponce. A number of other buildings are in process of erection or are being planned, for which $150,000 has been appropriated out of the fund allotted to the island for education.

Over $38,000 was expended for text-books and school supplies and $29,000 for furniture, during the year, nearly 9,000 new school desks were procured and fixed in place. About two-thirds of the text-books are in Spanish, as teaching in the rural schools is conducted entirely in that language and they constitute more than half the schools of the island.

The aim is to have all the teachers learn English eventually, so as to enable them to use English text-books, and inducements for the teachers to learn English generally meet with willing response. It is proposed to place a premium, such as higher salary, upon the work of a native teacher who uses English. More American teachers, who should be earnestly devoted to their work, should be engaged at a minimum salary of $600; at present the average paid is $450 a year.

The report shows that increased attention is being paid to instruc-

tion in agriculture in the rural schools, and the appended statement of Mr. F. N. Pennock, an expert on the subject, contains valuable suggestions, which the insular department will adopt. This branch of instruction has been made the subject of lectures to teachers by Mr. Pennock, the programme of which is given.

Industrial education is also receiving marked attention. Practical artisans, competent to teach, are to be employed to give instruction in these schools, whose graduates will, it is intended, be able to earn their own living at different trades. A building is under construction in Ponce for an industrial school, to cost $25,000, while in other cities suitable quarters have been rented. A number of night schools and kindergartens have also been established, the latter arousing much enthusiasm. The work of the normal school has been extended so as to include a series of meetings in different parts of the island for the purpose of exciting an interest in normal education and the public schools. This work was furthered by the cooperation of Dr. James Earle Russell, Dean of Teachers' College, Columbia University, New York, and Dr. C. Hanford Henderson, both of these gentlemen giving addresses at various places.

The commissioner states the needs of his department by explaining that there are 60,000 children enrolled, while there must be 350,000 children of school age in the island, of whom 300,000 ought to be in school. To provide for them properly would require an annual expenditure of $3,000,000, a sum exceeding the total revenues of the island by 50 per cent. The present budget is $532,000, which the commissioner declares should be increased next year to $750,000 at least. The total expenditures for 1901–1902 were $464,478.67.

INSPECTORS OF COAL MINES IN THE TERRITORIES.

By act of Congress approved March 3, 1891 (26 Stat. L., 1104), the President was authorized to appoint, at an annual compensation of $2,000 each, a mine inspector in each organized and unorganized Territory of the United States wherein were located coal mines, the aggregate annual output of which would be in excess of 1,000 tons per annum. Appropriation is now made annually by Congress for two such inspectors—one of the Indian Territory and the other of the Territory of New Mexico.

INDIAN TERRITORY.—William Cameron, the mine inspector, reports that there has been considerable activity in the coal fields in the Indian Territory and the output of coal has been greater than the preceding year.

Careful and thorough inspections were made of each and every mine in the Territory; where additional machinery, slopes, entries, means of escape, ventilation, or other appliances necessary for the safety of

the miners was required, they were in almost every instance promptly supplied by the operators. Careful investigation was made of the ventilation of the mines, using in connection therewith an anemometer; in most instances the machinery in use was of sufficient size and capacity to supply throughout the whole mine the quantity of air required by law. The attention, however, of the operators was, in some cases, called to the fact that a proper volume of air was not conducted to the working faces, and that the workings were not kept clear from standing gas. These suggestions were promptly acted upon and resulted in a greatly reduced number of accidents from explosions by gas. The majority of the mines in the Territory are provided with fans for ventilating purposes, but where there are air shafts, and it was practicable and necessary, proper stairways, or ladders, for the escape of the men were required to be placed therein. Care has been taken that furnace shafts should not be used as escape ways, but that proper escape ways independent of such shafts should be provided and used.

Section 10 of the act for the protection of the lives of miners requires that metal speaking tubes from the top to the bottom of shafts or slopes shall be provided in all cases. This has been found to be very difficult of practical execution for the reason that in very long slopes, some of them nearly a mile in length, conversation can not possibly be carried on at this or even a much less distance by speaking tubes. In several of the mines, notably in that of the Osage Coal and Mining Company and the McAlester Coal Company, telephones have been installed with excellent practical results and the substitution of these instruments for metal tubes he regards as a substantial compliance with the law.

All coal companies operating in the Territory have provided their cages with safety catches and covers overhead of an approved pattern and effective character.

The class of men in charge of the engines and other machinery in the mines will compare very favorably with such class anywhere in the United States. The inspector states that he has made personal investigation of the character and habits of such men and as a rule has found them to be experienced, sober, and competent.

The mines in the Territory have on all occasions been open to inspection and no objection or the placing of obstacles in the way of visits by the inspector has ever occurred. At times children under 12 years of age have been found in the mines and they have been promptly sent home. The temptation, however, to the parent to avail himself of his son's wages at a very early period in his life is exceedingly great and necessitates very careful inquiry in order to prevent violations of the law regarding the employment of children.

The output of coal for the year ended June 30, 1902, was 2,741,797

tons, an increase over that of the preceding year of 350,109 tons, the total estimated value of the coal so produced being $4,141,368.

The output of coke for the same period was 49,279 tons, being an increase of 15,739 tons over the preceding year; the value of the coke production was $203,530. No new coke ovens have been built during the current year.

The number of operators producing coal during the current year was 60, as against 28 for the preceding year. The number of mine openings have increased; 8 slopes have been abandoned; 4 new shafts have been sunk; 30 new slopes and 3 new drifts, showing a net increase of 29 openings for the current year over the preceding year.

A large number of strip pits have been in operation, but owing to the constantly changing character of this work no estimate could be made.

The output of coal for the current year has been very much curtailed, for two reasons: First, at the earlier period there was a shortage of orders, arising to some extent from the threatened introduction of Texas oil to supplant the use of coal formerly supplied from mines in the Indian Territory; and second, when it later became evident that the demand would be increased, the railroads were unable to furnish cars or move the traffic, from the want of engines, and many of the larger companies have been only able to run about half time from the latter causes.

The total number of men and boys employed in mines for the current year was 6,234. For the preceding year 5,272 were employed, thus showing an increase of 962 men and boys.

There were 149 accidents during the year, 60 of which proved fatal; the number of accidents during the preceding year was 139, of which 44 were fatal. In the mines in this district carburetted hydrogen, or explosive gas, is generated naturally in great quantities, especially in the McAlester vein of coal, and the coal dust is of such volatile and explosive character that sinking of old workings to greater depths constantly increases these dangers. This fact accounts for many of the serious burnings that have occurred, whether resulting from explosive gas or from windy shots which have ignited the dry and explosive coal dust.

Appended to the report is a detailed statement of the several accidents and the cause thereof, together with copies of decisions of the Department construing the act of March 3, 1891, for the protection of the lives of miners, and the act of July 1, 1902, amendatory thereof.

NEW MEXICO.—Jo E. Sheridan, mine inspector, reports that the provisions of the act of Congress providing for the protection of miners has been strictly enforced, and that all of the principal operators have rendered voluntary and prompt aid in the compliance with and enforcement of the law in their mines. The mine owners realize

that the preservation of safe conditions in the mines is a matter of business economy. It would be unjust, however, to attribute their action to this motive alone. In no line of business does the employer show more consideration and solicitude for the safety and welfare of his employee than is generally practiced by the coal operators of New Mexico.

The inspector calls attention to the vast area of coal lands and enormous available tonnage of coal which may be profitably mined. The competition of fuel oil and bearing upon production of coal in the Territory is discussed, and it is shown that the development of other Western industries and settlement of the country has more than compensated for the market lost by competion of fuel oil. This competition he predicts to be only temporary, taking for his premises occurrences of similar conditions heretofore in other fuel oil and coal competitions.

Labor troubles at the mines have been amicably settled, and a full force of men is at work upon the majority of the mines; yet there is a dearth of coal miners, and a few mines are still short of men.

The gross production of coal for the fiscal year ended June 30, 1902, was 1,132,944 tons; amount used at mines, 30,898 tons; net product, 1,102,046 tons; estimated value of net product on board cars at the mines, $1,609,898.90. The gross output, 1,132,944 tons, shows a decrease of 84,586 tons from product of preceding year. This decrease was attributable to scarcity of miners during the past two years and consequent restricted development of the mines.

During the year seventeen fatal accidents occurred, or one life lost per 66,643 tons of coal mined. Twelve hundred men were employed underground and 410 men outside; total 1,610 men; 53 boys were employed underground and 19 outside; total, 72.

Oil was substituted for coal as a fuel upon the Southern Pacific Railroad, from San Francisco, Cal., to El Paso, Tex., a distance of 1,150 miles, and upon the Sante Fe Pacific Railroad, from San Francisco, Cal., to Seligman, Ariz., and branch lines, 911 miles, or a total mileage of 2,061 miles. Besides the substitution of oil upon these railroads, fuel oil has also replaced coal for domestic and manufacturing uses in many parts of California, Arizona, and Texas, where New Mexico coal formerly found a market; yet, the coal production of the mines most affected by competition of oil, McKinley County mines, show an increased production of 30,221 tons over the preceding year.

Never before has so much substantial development and equipment been put upon the coal mines of New Mexico in a single year, and the results of development are beyond the most sanguine expectations of the operators. Taking every condition and circumstance bearing upon the coal industry of New Mexico into consideration, it is evident that a very prosperous era is close at hand for the coal miners of the Territory.

The area of coal lands in the Territory is given approximately as 1,365,480 acres, and the available tonnage at 8,173,840,000 tons. McKinley County stands first among the coal-producing counties of the Territory, showing a production of 561,436 tons, of a value of $779,182, against 531,215 tons last year; 700 men were employed. Colfax County is second, with 264,364 tons, valued at $280,197, four hundred and sixty-seven men and 29 boys employed, against 332,046 tons last year, a decrease of 67,682 tons, caused by lack of labor and consequent restricted development. Lincoln County is third, with 121,902 tons, 153 men and 6 boys employed, against a production of 173,782 tons last year. Santa Fe County is fourth, with a product of 103,461 tons; 177 men and 7 boys employed. This shows a decrease of 11,885 tons, due to fire in Cerrillos bituminous mine curtailing product. Rio Arriba County produced 50,600 tons, giving employment to 48 men and 3 boys. Socorro County produced 29,681 tons, 62 men employed, against a product of 14,116 tons last year. San Juan County produced 1,500 tons; 3 men employed. During the year 11 new mines were opened—9 in Colfax County, 1 in Santa Fe County, and 1 in Socorro County. Four mines were abandoned 3 in Colfax County—and 1 in Lincoln County. Three mines in McKinley County temporarily suspended operation on account of lack of demand.

The inspector calls special attention to the necessity of measures being taken to eliminate the probability of coal-dust explosions, now of such frequent occurrence, in all of the Central, Southern, and Western coal-producing States, as well as in the coal mines in the Territory; so general is this danger, he states, and so great has been the loss of life therefrom that effective measures to counteract it are well worthy the attention of the Federal Government. He recommends that a commission composed of experts in the manufacture of explosives be appointed for the purpose of experimenting and producing a flameless explosive for use in coal mines, an explosive which could be manufactured at reasonable cost, and which would be safe and convenient to use. With the same end in view, he recommends that restrictions be placed upon miners in regard to "shooting off the solid," or shooting coal without any preparatory coal cutting or undermining, whereby the force of the explosion is projected in the direction of the mouth of the drill hole, thus frequently producing a blown-out shot, from which cause a majority of dust explosions originate.

Attention is directed to the advisability of making a geological survey of the Territory for the purpose of identifying the coal-bearing areas of the Territory more accurately; such survey he states would also be of great utility to the operators in metalliferous mining.

The mine inspector again recommends that the law be amended, making the miner as well as the mine owner responsible for dereliction of duty, whereby the safety of fellow-workmen or his own safety may be imperiled.

NATIONAL PARKS AND RESERVATIONS.

YELLOWSTONE NATIONAL PARK.

The Yellowstone National Park, set aside by act of March 1, 1872 (17 Stat L., 32), is located in the States of Montana and Wyoming, and has an area of 2,142,720 acres. The average altitude is about 8,000 feet.

Maj. John Pitcher, Sixth Cavalry, U. S. Army, acting superintendent, reports that the traveling public seems to have awakened to the fact that there are many wonderful things to be seen on our own continent, and travel through the West has vastly increased during the past summer; and Yellowstone Park, which is one of the most wonderful and interesting sections on our continent, has been visited during the past season by more tourists and travelers than ever before. Congress has also realized the fact that the park is valuable and interesting to the people of the United States, and last year made liberal appropriations for improvements, which will enable the engineer officer in charge to place the roads in such condition as to greatly increase the pleasure and comfort of travel through it in the future. Unfortunately this appropriation did not become available this year until too late to enable the officer in charge to do much work which would add to the comfort of the tourist this season, but this work will be continued in many places during the winter, so that by the opening of the next season great improvement in the condition of the roads will be seen.

The railroads are also beginning to show an interest in the park and a desire to make it easy of access to the traveling public. The Northern Pacific road has extended its line to Gardiner, a little town just outside of the northern boundary of the park and only 5 miles from the Mammoth Hot Springs, where it has determined to build, at an early day, a comfortable depot. When this is completed, the tourist, after leaving the train and getting aboard a stage, will at once strike one of the finest roads in the park, and avoid the rough and dangerous piece of country road between Cinnabar and Gardiner. The Union Pacific Railroad, or the Oregon Short Line, is also showing considerable interest in the park, and contemplates the building of a road from Monida to Dwelles, over which to run automobiles for the purpose of bringing its passengers more expeditiously and comfortably to the western entrance of the park.

The work of laying the necessary pipes for the new water system at Mammoth Hot Springs has been completed under the direction of Capt. Hiram M. Chittenden, U. S. Engineers, and the new system furnishes an ample supply of fine, clear water for all possible purposes. The overflow from the new reservoir, together with the hot water from a part of the Mammoth Hot Springs, will be utilized for running an

electric-light plant, which is also in the course of construction under the direction of Captain Chittenden.

The park has been very fortunate in regard to forest fires, as only two of any consequence have occurred during the season—one in the vicinity of Blacktail Deer Creek, which was extinguished by the troops before it had done any great amount of damage, and the other in the high mountains east of the Yellowstone River near Tower Falls. The latter was in an almost inaccessible place and burnt itself out without doing much damage. Many camp fires were left burning along the roads, but they were all extinguished by the mounted patrols before they had an opportunity of spreading. Only two campers were arrested for leaving their fires, and but one of these was brought before the United States commissioner for trial; the other was taken back by the patrol and required to properly extinguish his fire, and then report to the acting superintendent of the park at Mammoth Hot Springs and show cause why he should not be tried. He proved that he had used reasonable precautions in the matter, and was let off with an admonition to be more careful in the future.

The trout fishing in the park during the past summer was unusually good and a source of amusement and enjoyment to many of the tourists. The fish hatchery that it was recommended last year should be constructed was not built, but the United States Fish Commissioner has authorized Mr. D. C. Booth, superintendent of the hatchery at Spearfish, S. Dak., to construct a building at the West Thumb of the Yellowstone Lake for the purpose of eyeing the eggs of the black-spotted trout. This establishment will be of no special benefit to the park, but will be very useful for the purpose of distributing black-spotted trout throughout the country, and these trout can be exchanged for other varieties which are wanted for the park. Mr. Booth collected and hatched several million eggs of the black-spotted trout at his camp on the Yellowstone Lake during the past summer. These were sent to his station at Spearfish, and in exchange for these he sent into the park about 50,000 small brook trout, which were planted in the tributaries of the Gardiner River, and about 40,000 eggs of the rainbow trout, which he hatched at his camp and planted in a small stream that flows into the Yellowstone Lake.

An appropriation of $15,000 was made for the building of a weather-bureau station near the Mammoth Hot Springs; upon the request of the Secretary of Agriculture, a suitable site was set aside on which to construct the building. The establishment of this station is a matter of considerable importance to the park, as the publication of the weather reports during the summer would call attention to the fact that the park is a desirable summer resort, and would add to its popularity.

The boundaries of the park on the north, west, and south have been carefully surveyed and marked; about 50 miles of the boundary on the eastern side of the park still remains unsurveyed, but the necessary

funds to pay for the survey and marking of this line have been appropriated, and it is believed that the work will be completed next summer.

The large game in the park continues to be one of its most interesting features, and during the early part of the season large bands of elk and many deer and antelope were seen by the tourists. Late in the summer, when flies and mosquitoes become troublesome, nearly all of the elk and deer move back into the high mountains and are seldom seen by the tourists who travel through the park by wagon. Last winter was an exceedingly favorable one, and there should be a considerable increase in every species of large game, but this can not be determined until after the snow falls and the game is driven down from the mountains to their winter feeding grounds.

A number of mountain sheep have been seen on Mount Everts, where a band of 56 wintered last year. There were several young ones among those seen. These animals could be seen any day during last winter feeding close to the road between Gardiner and the Mammoth Hot Springs, and they were so tame that they could be approached within 30 yards or nearer, on foot, without their being in the least disturbed.

The antelope are still protected by the laws of Montana, and are rapidly increasing. A number of bands of from 50 to 100 could be seen at any time last winter on the northern slope of Mount Everts and in the vicinity of the town of Gardiner. The inhabitants of Gardiner are much interested in the preservation of these antelope, and see to it that no one in their vicinity disturbs them. But one case was reported of any of them being killed during last winter. This killing was done by two Italian miners from Horr, who were arrested by a park scout; but while he was bringing them in during the night his horse fell with him and the men escaped, leaving their guns and equipments in the hands of the scout.

The bears have increased in numbers, and continue to be a great source of interest to tourists, as they can be seen at any time during the season around the garbage piles at the various hotels and camps. They are perfectly harmless as long as they are let alone, but if fed and petted they lose all fear of human beings and are liable to do considerable damage to property at the hotels and camp kitchens, and are also liable to frighten tourists by following them with the expectation of being fed. The black and brown bears are the most friendly, and consequently give the most trouble. Three of them became such a nuisance during the past summer that it became necessary to have them killed.

It is difficult to make some of the tourists in the park realize that the bears are wild, and that it is dangerous to trifle with them. The possibility of injury to some one was anticipated, and on August 8, 1902, a circular was issued by the acting superintendent of the park, and posted at all of the hotels and permanent camps, absolutely pro-

hibiting the interference with or molestation of bears or any other wild animals in the park, and also forbidding anyone to feed them except at the regular garbage piles. A violation of the instructions contained in this circular resulted in the serious injury of a tourist from Hart, Mich. Since this accident barriers have been put up at all of the garbage piles, and signs indicating the danger of approaching too near the bears have been posted. The superintendent of the park recommends that the regulations governing the park be amended so as to include the gist of the circular relative to the bears.

The beaver has apparently increased, and fresh signs of their work can be seen along any of the streams in the park.

There are some blue and ruffed grouse in the park, but the scarcity of birds of all kinds is frequently noted, and the acting superintendent suggests that the capercailzie and blackcock, game birds of northern Europe, might profitably be introduced in the park.

People living in the country surrounding the park are showing a friendly spirit in the matter of the protection of game, and seem to realize that this is or should be a matter of great interest to them. The recent formation of a game protective association in the Jackson Hole country, and the promise of this association to back up the game warden of Wyoming in his efforts to execute the game laws of that State, is an indication of what is being done along the southern border of the park.

Many large bands of elk winter in the northeastern corner and in other parts of the park, but the chief winter range for the elk that summer in the southern part of the park is located in or about the Teton Forest Reserve. For this reason the acting superintendent of the park suggests that this reserve and the Yellowstone Park Forest Reserve should be either included within the limits of the park or designated as game preserves.

I have discussed in prior reports the advisability of extending the boundaries of the Yellowstone National Park so as to include the forest reservations on the east and south of the park as the best means of affording protection for the large game therein, particulary during the winter season.

I desire to again direct attention to this important subject, and to urge the early enactment by Congress of the legislation necessary. The steps heretofore taken looking to legislative action in the matter are set forth in detail in the reports of the Secretary of the Interior for the years 1898, 1899, 1900, and 1901, respectively, wherein among other things it is stated—

Under date of February 1, 1898, there was transmitted to Congress a report made on the 12th of January, 1898, by Col. S. B. M. Young, Third U. S. Cavalry, then acting superintendent of the park, recommending the extension of the limits of the park, and submitting a draft of a bill with a view to carrying the same into effect.

The boundaries as suggested in said bill, which are indicated on a map accompanying the same, would extend the limits of the park so as to embrace the Yellowstone Timberland Reserve, which lies on the east and south boundaries of the park, and comprises about 1,914 square miles; all that portion of the Teton Forest Reserve lying east of the summit of the Teton Range and comprising about 1,050 square miles, and adjoining the Yellowstone Timberland Reserve on the south, together with an unreserved area of about 30 square miles at the southwest corner of the park, in Idaho, and an unreserved area of about 260 square miles at the northwest corner, in Montana.

In the forest reserves are fine bodies of timber which it is important should be preserved from fires because of its value as timber, as well as the protection to watersheds and against fires running into the park.

It is reported that during the winter months the large game from the National Park herd roam to a very considerable extent in the areas proposed to be included within the park, and they should have all protection possible from destruction by marauders, who are constantly on the watch for game as it roams out of the park limits. The State game laws are applicable to the forest reserves, and for this reason it is impracticable to prevent the killing of game in the reserves in the same manner and to the same extent as it is prohibited in the park. The superior discipline of regular troops makes a more effective patrol than the civil forest officers, and cavalry can cover a greater extent of territory with more expedition, and is better able to cope with trespassers than are forest rangers.

In view of the importance of protecting this country, which has an international reputation on account of its scenic beauties, and to throw additional safeguards about the big game whose natural home is the National Park, and to protect more effectually the timber embraced in the forest reserves adjoining the park, I think it a wise policy that the additional areas herein described be embraced in and placed under the laws and management relating to the Yellowstone National Park.

Subsequently, on March 18, 1902, I transmitted to Congress (House Doc. 590, Fifty-seventh Congress, first session) papers tending to show that the large game, moose, elk, deer, antelope, mountain sheep, etc., which has its summer range within the Yellowstone National Park, drift out of that reservation in the fall, seeking a winter range for food, into the forest reservations abutting the park on the south and east, and that while in that country the animals are ruthlessly killed in large numbers by pot hunters and others for their heads, teeth, pelts, and meat; and transmitted a form of bill providing for the extension of the limits of the Yellowstone National Park so as to include the above-mentioned forest reservations.

Congress at its last session in the act approved July 1, 1902 (32 Stats., 574), appropriated the sum of $15,000 for the purchase of buffalo for the park and for the construction of a suitable inclosure, with a view to starting a new herd of these animals in the reservation. Mr. C. J. Jones (better known as "Buffalo Jones") was appointed as game warden in the park, and reported to the acting superintendent for duty on July 16, 1902. The site selected for the corral is located about 1 mile from the Mammoth Hot Springs, and will afford considerable shelter and feed for the buffalo in the way of timber and grass during the winter. A fine stream of water runs through it, and it is easy

of access from Mammoth Hot Springs at all times. The necessary Page woven-wire fencing was purchased and fixed in place. Fourteen buffalo cows have been purchased, and delivered in fine condition, from the Allard herd, located on the Flathead Agency, in Montana, and three bulls have been contracted for from the Goodnight herd in Texas. It is desirable to introduce new blood in the new herd to be started in the park, and it is with this view that part of this herd is purchased from the animals located on the Flathead Agency and part from the Goodnight herd in Texas. This mixture of blood can be further increased by the capture of a few animals from the wild herd in the park (twenty-two of which were located last winter on the head of Pelican Creek), and arrangements have been made to try and capture them the coming winter. This new herd of buffalo will be fed and handled in the same manner that domestic cattle are handled in the West, and before they are turned loose they will be branded "U. S." in such a way that they can always be identified as United States property.

The Yellowstone Park Transportation Company, bringing in tourists from the northern entrance of the park, has largely increased its plant, and the service continues satisfactory. Messrs. Humphrey & Haynes, conducting the Monida stage line from the western entrance of the reservation, have also increased their equipment and given satisfaction to their patrons. Their business has shown a decided increase during the past season.

The services rendered by Mr. W. W. Wylie at his permanent camps have been satisfactory to his patrons.

The Yellowstone Park Association has done much to improve its hotels throughout the park. The buildings used by them are clean, the beds comfortable, and the fare very good. The acting superintendent suggests that in its management of the hotels the corporation is deserving of much consideration, as the majority of the hotel buildings are located at long distances from the railroad and all markets, and their effective management has presented many administrative difficulties.

The total number of visitors to the park during the season was 13,433. The aggregate number carried over the regular route by the Yellowstone National Park Transportation Company was 4,570; by Messrs. Humphrey and Haynes, 1,408; the aggregate traveling with licensed transportation, 2,441; aggregate number carried by private transportation, 4,685.

During the season 3,728 tourists took the trip across the Yellowstone Lake with the Yellowstone Lake Boat Company. Of this number, 1,621 entered the park with the Yellowstone National Park Transportation Company, 304 with Messrs. Humphrey and Haynes, 1,681 with W. W. Wylie, and the balance, 122 people, were campers.

The acting superintendent suggests the advisability of permitting competition in the boat business on the lake; that the beauties and attractions of this body of water would be greatly enjoyed by many tourists if the transportation facilities thereon were better. He also expresses the opinion that if a tour of the Yellowstone Lake is to be made a part of the regular transportation service in the park, it will be necessary to place a larger boat or more small ones on the lake, as the boat now in use is entirely too small to carry with safety and comfort a large number of passengers.

A new geyser broke out in the Norris Basin on January 3, 1902, and has continued to play with considerable regularity since that time. The Monarch Geyser, also in Norris Basin, ceased to play sometime during the month of August, and a new vent for this geyser broke out a few yards up the hill from the old one. The Roaring Mountain appears to be much more active this year than it has been for sometime past.

The acting superintendant again recommends that the post of Fort Yellowstone be increased to a four-troop post, and that it be garrisoned by the troops of two different regiments, so that when it becomes necessary to change the troops the movements could be so arranged as to leave half of the old men in the park to take care of it until the new detail had a chance to become familiar with the park and their new duties. Changes during the past season have resulted in there being three different sets of men guarding the park within four months, which has rendered the matter of properly caring for it during the tourist season a difficult problem. The post has been improved by the planting of lawns about the officers' houses and in front of the men's quarters. An electric-light plant for the use of the post is now being constructed, and when completed will add greatly to the comfort and convenience of everyone in or about the post.

Embodied in the report is a letter from Capt. H. M. Chittenden, in charge of improvements in the park, which shows that the following work has been accomplished under his direction:

The general repair work has covered the entire system of roads, and a far greater amount of work has been done in this respect than in any other single season in the history of the park. Extensive reconstruction and surfacing of the main line has been carried as far as the tenth post from this place, and will leave the road in a thoroughly complete condition as a macadamized highway. A large amount of surfacing, which will form a part of the finished work, has also been done at various points along the line, particularly in the vicinity of the Fountain Hotel. As soon as sprinklers could be purchased the road was sprinkled from Gardiner to the Golden Gate with sufficient effectiveness to prevent any unpleasantness on account of dust over that stretch of the road. Sprinkling was also carried on to some extent farther on the road toward Norris.

A large working force has been employed at Mammoth Hot Springs during the entire season. About 7,150 feet of 20-foot roadway has been thoroughly graveled,

and will, when finally rolled, make a permanent and satisfactory highway. About 31,380 square feet of concrete sidewalk has been laid, 11,370 linear feet of ditch for the maintenance of shade trees has been dug; and 1,230 linear feet of water main has been laid. Hydrants have been put in for sprinkling and irrigation of the entire tract, including in all about 30 acres within the exterior line of roads. The grounds have been entirely cleared off, graded, and covered with fertile loam, and placed in a condition ready for seeding in the ensuing spring. Before the season is over some of the shade trees will have been set out, leaving the rest until next spring. The electric-light plant will be installed before the end of the season, which will have sufficient capacity to serve any future needs of this place.

The plant will be in every particular first class and as good as any in the United States for its size. The motive power is water, and a large ditch has been dug, bringing a portion of the waters of the Gardiner River into Glen Creek and thence, by the ditch constructed last year, to the reservoir above the post. The flume leading from the reservoir to the power house includes 345.5 feet of concrete aqueduct. The machinery in the power house is all in duplicate and has a combined capacity of 100 kilowatts.

Two large parties have been at work on the Mount Washburn Division since about July 15. The one working from the Canyon has opened the road as far as Dunraven Pass and has completed it to within 1 mile of that point. The party on the north side of the mountain has completed about 5 miles of roadway, leaving about one-half mile near Tower Falls to be finished by winter work.

A considerable amount of work has been done on the Natural Bridge cut-off, but there was not sufficient time to finish it entirely.

Two large parties were on the work on the east road from about July 15 to September 20, and one of them will continue until about the middle of October, after which a small party will work in the valley of the Shoshone River long enough to blast away several cliffs and build two large bridges. The entire amount of road that will have been opened before the close of the season is about 23 miles. This will leave about 12 miles to be opened next spring.

One large party went over the entire line of the south road, doing extensive repair work as far as Jackson Hole, from which point they passed over the Fort Washakie military road, doing repair work under a balance remaining from an old appropriation for that road.

Before the close of the season a new alignment of roads near the Canyon Hotel will have been completed and the road surfaced with macadam for about 1 mile leading toward Norris.

The three bad hills, namely, the one called Blanden Hill and the other two at Virginia Cascade, will have been cut out and replaced by easy grades before the end of the season. This will practically remove the last of the heavy grades on the main road system. A swath has been cut through the timber along this road over the entire divide between Norris and the canyon in order to let the sun in and cause a more rapid melting of the snow in the spring.

The Government sawmill has manufactured about 300,000 feet of lumber for the use of the work.

The soldier station located on the Snake River has been torn down and removed to a point where the road crosses the boundary of the park. The impossibility of securing carpenters at this season of the year has made it impracticable to repair as many of these stations as was contemplated.

Before the end of the season it is expected to regrade the road between Mammoth Hot Springs and Gardiner over those portions that have not yet been completed and to erect an entrance lodge and station house at the boundary of the park near the new Northern Pacific Railway station.

Work has been begun in the use of the rock crusher, but the macadamization of the roads with crushed rock has not yet been carried to any great extent, only about a mile of finished roadway having been constructed.

It is expected before the end of the season to reconstruct about one-half mile of road in the Gibbon Canyon and to place abutments for one of the new bridges contemplated over the Gibbon River.

Owing to the impossibility of securing steel in time for use during the present season, none of the contemplated bridges have been constructed. It is expected to let a contract for about thirty bridges on the 15th of the coming month in order that the steel may be on hand and ready for erection at the opening of the next season.

Estimates for the park for the ensuing fiscal year have been submitted to Congress for an appropriation of $30,520, $15,520 to be used in the management and protection of the reservation and $15,000 for the purchase of additional buffalo and their care.

Yosemite National Park.

This park is situated in Tuolumne, Mariposa, and Mono counties, Cal., and covers an area of about 1,512 square miles, being 36 miles wide and about 42 miles long. The lands embraced therein were set aside by act of Congress approved October 1, 1890 (26 Stat., 650), and were placed under the supervision of the Secretary of the Interior.

Maj. O. L. Hein, Third Cavalry, U. S. Army, acting superintendent, reports that he entered on the discharge of his duties June 26, 1902, having under his command Troop E of the Third Cavalry.

A guard was at once established at Wawona, and on June 27 a detachment was sent to Crockers Station, the Oak Flat road entrance to the reservation. Both have since been maintained.

During the season 33 patrols were sent out and kept moving in the park, looking for trespassers and hunters and fighting forest fires. There were a large number of forest fires in the western and southern parts of the park during July, August, and September. They were fought and kept under control or extinguished by detachments of soldiers, so that but little damage resulted to the trees within the park. One of the fires, about 1,500 acres in extent, near Jersey Dale, is believed to be of incendiary origin, and two half-breed Indians, against whom there was strong circumstantial evidence, were arrested.

To prevent the breaking out and spread of forest fires the superintendent expresses the opinion that there should be inaugurated an annual systematic burning of all inflammable material found on the mountains and in the valleys, such as fallen and decayed trees, and decaying pine needles and cones, which have accumulated in large quantities and cover the ground to a considerable depth. As a necessary precaution against forest fires in the reservation, the Department has instructed its officers on duty therein to destroy by fire, during the winter months, when it can safely be done, the fallen timber and underbrush at such places on the Government lands in the park as may be necessary.

Game and fish are plentiful in the park, and notwithstanding the fact that a large number of firearms were taken by patrols, no cases were reported by them of campers or tourists violating the regulations forbidding the destruction of game or fish. Capt. H. C. Benson, Fourth Cavalry, U. S. Army, formerly acting superintendent of the park, spent his vacation in the reservation and rendered valuable service in collecting and stocking a number of streams with fish.

The new regulations promulgated by the Department, under date of June 2, 1902, and hereto appended (pp. 224–226, Exhibit L), were carefully posted throughout the park and were generally observed by tourists.

During the season 8 bands of sheep, numbering 22,600 head, 23 head of horses, and 250 cattle were found trespassing in the park and driven beyond the limits, and 18 herders, with 8 saddle and pack animals, were brought into camp and detained there for some time and then ejected from the park.

Forty-six rifles, 23 shotguns, and 17 revolvers were taken from hunters and campers by the patrols and afterwards returned to the owners upon their request.

The aggregate amount of the cost of construction and repair of roads, trails, and bridge already contracted for, $4,878, is within the limits of the appropriation for the current fiscal year, and the balance of the appropriation, $360, of the preceding fiscal year was expended as follows:

Trail from Alder Creek to Paragors Meadows	$373
Trail from Devils Post Pile to Bloody Canyon (a distance of about 30 miles)	1,200
Trail from Mono Meadows to Lamberts Soda Springs (a distance of about 28 miles	700
Trail from Ostrander Lake to Crescent Lake (a distance of about 7 miles)	265
Trail from Lake Eleanor to Lake Vernon (a distance of about 11 miles)	640
Trail from Lake Vernon to Till-Till Valley (a distance of about 8 miles)	800
Bridge over Tuolumne River near Lamberts Soda Springs	900

All the work contracted for will, it is expected, be completed before the departure of the troops in the fall

Applications were made under the act of Congress approved February 15, 1901 (31 Stat. L., 790), by several parties to conduct surveys in the park for the purpose of establishing electric plants for the operation of electric lines, mines, etc., which, under instructions from the Department, were refused. One party was discovered running a line along the Merced River for an electrical power company after having been refused permission. The surveyor in charge and his party were ordered out of the park. A special report of the case forwarded to the Department is now under consideration.

Pursuant to instructions from the Department, application was made to the register and receiver of the local land office for a list of patented lands within the park, and, as opportunity presented, the rangers on duty in the reservation were directed to examine the lands and report

definitely as to the metes and bounds thereof, whether the land was agricultural or timber, the quantity of timber standing as well as dead and down, and approximately the value of the timber on each tract, etc. The result of the examination disclosed the fact that it was impossible in many instances to find the monuments of the several surveys, owing to the lapse of time since the surveys were made. It was also discovered that some of the owners were dead and that others had left that section of the country. The superintendent states that the magnitude of the work required to obtain the desired information is such that the service of a competent surveying party would be required for at least one year. The superintendent recommends that Congress be urged to enact a law extinguishing titles to lands within the park limits, for as long as there is private ownership of land therein it is almost impossible to keep off stock from the grazing lands and to protect the fish in streams and lakes.

There are in the park 53,931.15 acres of patented lands and three claims, embracing 327.975 acres, on which patents have not yet issued. The Department has always recognized the rights of owners, transferees, or lessees of such lands to use the same for all lawful purposes, and there has been practically no interference in the use and enjoyment of such property, except where it was desired to graze sheep or cattle thereon or cut and remove timber therefrom, and in such cases the regulations recently issued for the government of the reservation make every provision. While there has been but little friction during the past year with owners of this class of lands and there has been an inclination on their part to observe the regulations for the government of the reservation, yet, judging from experience of prior years in the management of the park, trouble may arise at any time. I concur in the conclusions of the acting superintendent that the best interests of the park demand the elimination of all private holdings therefrom, and reiterate the recommendation contained in previous annual reports that Congress authorize the purchase of these lands, or extend to the national parks in California so much of the act of Congress, approved June 4, 1897 (30 Stats. L., 36), as permits the relinquishment by owners of tracts of land in the several forest reservations and the selection in lieu thereof of vacant lands of like value in other localities which are open to settlement. At the first session of the Fifty-seventh Congress a bill (H. R. 14511) extending to the patented lands in the national parks of California the provisions of the act of June 4, 1897, passed the House of Representatives on the 28th day of May, 1902, and it is to be hoped that the Senate will act favorably thereon when it convenes.

There are four toll roads, built under the laws of California and owned by individuals and corporations, leading into the Yosemite National Park, three of which find their termini in the Yosemite Val-

ley grant, which is within the National Park, as follows: (1) The Big Oak Flat road, 19.03 miles of which are within the park (the original cost of construction was approximately $40,000); (2) the Coulterville road, 24.26 miles of which are in the park, the original cost of construction being approximately $75,000; (3) the Wawona road, 25½ miles of which are in the park, the original cost of construction being approximately $62,000. The acting superintendent expresses the opinion that all roads built for the purpose of accommodating the general public who wish to visit the National Park should be owned by the Government, and the people going there either for pleasure or health should not be required to pay for traveling on the park roads. In previous annual reports the matter of the purchase by the Government of the toll roads in this reservation has been fully presented and the subject is again adverted to with a view to the enactment by Congress of such legislation thereon as the facts presented appear to warrant.

The acting superintendent recommends that the sum of $8,850 be appropriated for the construction and repair of trails, etc., in the park for the ensuing fiscal year. He states that, if practicable, arrangements should be made to have the work begun on the trails as early in the season as possible, not later than July 1, for it is difficult to secure bids for the same if the advertisements for the contracts are unduly delayed, nor can the work be finished by the end of the season if undertaken later than the date mentioned. I have the honor, therefore, to recommend that appropriations for work in this park be made immediately available.

Sequoia and General Grant National Parks.

Sequoia Park is located in Tulare County, Cal., and has an area of about 250 square miles. It was set aside by act of Congress approved September 25, 1890 (26 Stat. L., 478), and placed under the control of the Secretary of the Interior.

Capt. Frank A. Barton, Third Cavalry, U. S. Army, acting superintendent, reports that with Troop F, Third Cavalry, he left the Presidio of San Francisco, Cal., June 13, 1902, arriving at Kaweah, Cal., on the 28th of the same month, and he remained in the park until the 15th of August, when leave of absence was granted him; thereafter he was succeeded by Lieut. G. B. Comly, who remained in charge of the reservations until the close of the season.

While the troops were absent from these reservations during the winter months Mr. Ernest Britten, forest ranger on duty in the Sequoia Park, will have charge of the national parks in California.

On the arrival of the superintendent in the park, Forest Rangers Britten and Davis reported for duty, and the former was assigned to the Sequoia and the latter was stationed in General Grant Park.

Detachments of troops were sent to establish small camps at Cloughs Cave, on the south fork of the Kaweah River; Old Colony Mill, on the road to the Giant Forest; Weishers Mill, Hockett Meadow, and at Cold Spring, on the Mineral King road, beyond Oak Grove. With the exception of Weishers Mill, these camps were all inside the metes and bounds of the park.

The supply camp at Kaweah, on the Hopping Range, was, as in previous seasons, located on patented land. This site is near the post-office, close to water, on comparatively level ground, and well suited to the purposes for which used. The superintendent states that the land should be purchased by the Government and the officer in charge of the parks not be subjected to the unpleasantness of requesting the use of land as a favor to the Government.

Regarding complaints made by people residing outside of the park, that animals within the reservation had been killed by the troops placed there to protect them, and the measures taken by him to prevent a repetition of such complaints during the past season, the superintendent states that—

> With so many small detachments from the main camp in charge of noncommissioned officers it is a difficult matter to prevent an occasional violation of the regulations regarding hunting in the parks, but there is a way to absolutely prevent it, and I adopted it, as I was determined that no such charge should be made under my administration.
>
> I required the carbines of the troops and all the carbine ball ammunition to be turned in, and had them boxed and stored at the supply camp at Kaweah, so that my men on detached service were armed only with the revolver, and while I remained on duty at the parks there was not a carbine taken by any of my men within the metes and bounds of either of the parks.
>
> If the soldiers on duty in the parks carry their carbines, whether or no they use them to hunt in violation of the regulations, the civilians of the surrounding neighborhood are only too quick to accuse them of it and to use this as an excuse for hunting themselves, claiming they have as good a right to hunt in the parks as have the soldiers. Again, if the general public believe that the soldiers violate the regulations, they are consequently loath to report any violations by others; and from the day that I disarmed my men I found that a new and very reliable source of information was immediately open to me, for the public generally and California in particular have the interests of these parks at heart, and the better class of the inhabitants are only too glad to render all assistance in their power to further a conscientious enforcement of the rules and regulations.
>
> As soon as it was known that my soldiers were not to carry their carbines, both forest rangers, who had always previously carried their guns, voluntarily gave them up, which removed the last possible chance for any one to charge that the rules and regulations of the parks were being violated by those on duty in them.

Early in the season due notice was given that no one would be allowed to carry guns through the parks without first presenting them at headquarters to be sealed, unless the owners were accompanied by an authorized guide or had a special permit in writing from the superintendent. Subsequently some tourists from San Francisco were discovered with two rifles; their arms and ammunition were immediately

taken up and held subject to the order of the Department, as required by the regulations. Objection was made by the owners, who by letter demanded the return of their arms, and the matter was taken up by the press of the State and published extensively with beneficial results. All firearms taken up in the park were returned to the owners at the end of the season.

Only one case of violation of the regulations regarding hunting occurred. Permission had been given for an authorized guide to conduct a small hunting party across Sequoia Park to the Forest Reserve. Shortly after, it was discovered that the party had killed a buck and a doe within the limits of the park. Possession was immediately taken of their firearms, the entire party removed from the park, and the permit of the guide revoked. The member of the party who had killed a doe, or female deer, in violation of the State game laws was later arrested by the civil authorities.

The superintendent states that in August he was tendered and accepted a commission as deputy State fish and game commissioner by the board of fish commissioners of California, to serve without compensation. This, under the laws of California, gave him authority equal to that of a sheriff, with power to arrest personally anyone violating State laws in the park and turn them over to the civil authorities. He recommends that similar powers be conferred on the forest rangers in order to better protect the game in the parks and forest reserves.

There was but one fire in the reservation, near Moro Rock, early in August, which was supposed to have been caused by lightning. It was extinguished by the troops before causing any damage. A camping party of three persons endangered Giant Forest by failing to put out their camp fire. A patrol was sent after them with instructions to arrest and bring them to headquarters if overtaken within the limits of the park. Subsequently the party was overtaken and brought back, which broke up their summer outing, besides putting them to considerable expense. This, with a reprimand, was deemed sufficient punishment to meet the ends of justice and to serve as a warning to other delinquents.

The new regulations for the government of the Sequoia and General Grant national parks promulgated by the Department June 2, 1902, hereto appended (pp. 224–226, Exhibit L), were posted at the different entrances to the park, all tourists were furnished with a copy of the regulations, and all passes or permits were indorsed on the back with a copy of such regulations, so that the possibility of a tourist pleading ignorance thereof as an excuse for their violation was avoided. Messrs. Broder and Hopping, who were granted a permit to transport passengers through and conduct camping parties in the park during the season, rendered valuable assistance in the distribution of the regu-

lations. Not a single case of violation of the regulations by any tourist who was a member of one of their parties was reported.

Special notices were posted in the park prohibiting the cutting of bark from the Giant Sequoias. This special form of vandalism, the superintendent states, appears to be common with a certain class of tourists who have the relic mania. He recommends an additional paragraph to the regulations prohibiting dogs in the park, as they scare squirrels, quail, grouse, and other small game, and run deer. If dogs are excluded from the reservation, along with fire arms, the game may not only increase in numbers, but also become as tame as possible.

The superintendent states that the tourist travel over the Old Colony Mill road to and through the Giant Forest will increase from year to year as the road is extended and the park becomes better known, and he therefore regards it as of the first importance to prevent the forests from being destroyed by fire; this can only be done by properly impressing on the tourist public the danger of a neglect of the regulations regarding fire.

Work on the road to the Giant Forest of Sequoias, the principal attraction in this park, was resumed at an early day after getting the road force together. The work on this road during the season of 1901 had been completed to beyond the Marble Fork Bridge, from which point it was resumed during the present year. A large quantity of solid rock was encountered during the work, but was quickly passed, and on October 12, 1902, two miles of road had been completed, and for a similar distance the road had been cleared for active work. He states that one not familiar with the character of the country in the Sierra Nevada Mountains can not appreciate the difficulty and expense attending the construction of this road, and that, in his judgment, at least another year's work will be required before it can enter the Giant Forest. When completed to the latter point, he suggests that it be continued in a circular direction in the forest to embrace all the points of interest therein, and recommends an annual appropriation of $10,000 for the park.

In previous years the tools used in road work have been stored each winter at Three Rivers, being hauled down the mountain at the end of the season and up again at the beginning of the next. In order to obviate this, cabins were constructed at Watson's Spring, Old Colony Mill, and the Marble Fork Bridge. These cabins also serve not only as temporary shelter for the rangers during mountain storms, but in case of small repairs the tools will be at hand for their use.

Pursuant to instructions from the Department, steps were taken toward ascertaining the approximate value of patented lands within the metes and bounds of the park, together with the probable market value of different kinds of timber standing or down, with a view to ultimately reaching an approximation of the total value of the pat-

ented land within the reservation. The superintendent states that lists were secured from the register and receiver of the local land office of such lands with copies of the original surveyor's field notes, and that considerable work was done on the lands in the Giant Forest.

As the boundaries or corners of nearly all the patented lands are unmarked and the surveys incomplete, he expresses the opinion that it will not be practicable to fully complete the work until the end of the season of 1903. Shortly after arriving in the park, from common report in the country, he was led to believe that when the road was completed into the Giant Forest it was the intention of the owners of patented lands in the forests to cut timber thereon and make use of the Government road to haul the same out of the park to market, which would result in the ruin of the Giant Forest. The Department, upon its attention being directed to this matter, issued the following notice, which was posted throughout the Giant Forest and the Giant Forest road and made public in other ways, to wit:

> This road is constructed by the Government for the comfort, convenience, and recreation of the public traveling in the park, and is not a part of any system of county highways. Heavy hauling, for commercial or other purposes, which will injure the road is prohibited.

In this park there are 972.87 acres of patented lands and one claim of 40 acres on which patent has not yet issued, and in the General Grant National Park there are 160 acres of patented lands. The attention of Congress has been repeatedly called to the advisability of the acquirement by the Government of the title of all private lands within this and the other national parks in California, but without effect. The extinguishment of the title to all private holdings within these reservations, either through purchase by the Government or the extension to the parks the provisions of the act of June 4, 1897 (30 Stat. L., 36), so as to permit the relinquishment by owners of patented lands therein, and the selection in lieu thereof of vacant lands of like value in other localities which are open to settlement, would result in better administration.

At the first session of the Fifty-seventh Congress a bill (H. R. 14511) extending to the patented lands in the parks the provisions of the act of June 4, 1897, supra, passed the House of Representatives on the 28th day of May, 1902, and it is to be hoped that it may be enacted into law at an early day.

Applications made under the act of Congress approved February 15, 1901 (31 Stat. L., 790), to conduct surveys in the park for the purpose of establishing electric plants for the operation of electric lines, etc., were, under instructions from the Department, refused.

The acting superintendent recommends the construction of a telephone line from Weishers Mill, on the east boundary of the park, on

the Mineral King road, and the supply camp at Kaweah, and also from the main camp in the Giant Forest and the supply camp. The only communication now is by mountain courier from Kaweah to Giant Forest, a distance of 25 miles over such a steep road that all the distance must be covered at a walk or a slow trot, there being but few places permitting of a rapid gait. Telephone connections, if installed, he states, would be of great use to tourists visiting the park, would facilitate the work of the superintendent, and in case of fire would save many hours in getting troops to the scene of conflagration.

Mount Ranier National Park.

By the act of Congress approved March 2, 1899 (30 Stat., 993), a portion of certain lands in the State of Washington, known as the Pacific Forest Reserve, was set aside as a public park, to be known as the Mount Ranier National Park.

Section 2 of this act provides, inter alia:

> That said public park shall be under the exclusive control of the Secretary of the Interior, whose duty it shall be to make and publish, as soon as practicable, such rules and regulations as he may deem necessary or proper for the care and management of the same. Such regulations shall provide for the preservation from injury or spoliation of all timber, mineral deposits, natural curiosities, or wonders within said park, and their retention in their natural condition. He shall provide against the wanton destruction of the fish and game found within said park, and against their capture or destruction for the purposes of merchandise or profit. He shall also cause all persons trespassing upon the same, after the passage of this act, to be removed therefrom, and generally shall be authorized to take all such measures as shall be necessary to fully carry out the objects and purposes of this act.

Section 5 provides:

> That the mineral land laws of the United States are hereby extended to the lands lying within the said reservation and said park.

No regulations for the government of the park "for the preservation from injury or spoliation of all timber, mineral deposits, natural curiosities or wonders within said park and their retention in their natural condition," as required by the regulations, have been promulgated by the Department, as no appropriation has been made by Congress for the management of the reservation and no superintendent could therefore be appointed to enforce such regulations.

In previous annual reports, in discussing the status of this National Park, attention was directed to the advisability of repealing, for administrative reasons, section 5 of the act of March 2, 1899 (30 Stat., 993), as well as the making of appropriations for the protection of the reservation. Considerable interest having been manifested by the public in this park during the year, and a privilege for the transportation of tourists over the roads therein having been granted, it became necessary, in the interest of the Government, to have a representative

of the Department therein; accordingly, the forest superintendent for the State of Washington was placed in charge thereof temporarily; this assignment, however, can not be continued for any length of time without serious interference with the proper performance of the duties of this officer in the enforcement of the regulations of the forestry service in the State. Proper steps have been taken looking to the early survey and marking of the park boundaries. I have, therefore, submitted to Congress, through the proper channels, an estimate of an appropriation of $3,000 for the management, protection, and the construction of necessary roads and trails in the Mount Rainier National Park during the ensuing fiscal year; it is earnestly recommended that favorable action be had thereon.

Crater Lake National Park.

By act of Congress, approved May 22, 1902, the tract of land bounded north by the parallel 43° 4′ north latitude, south by 42° 48′ north latitude, east by the meridian 122° west longitude, and west by the meridian 122° 16′ west longitude, having an area of 249 square miles in the State of Oregon, and including Crater Lake, has been reserved and withdrawn from settlement, occupancy, or sale under the laws of the United States, and dedicated and set apart forever as a public park or pleasure ground for the benefit of the people of the United States, to be known as Crater Lake National Park.

The park by said act is placed under the exclusive control of the Secretary of the Interior, who, among other things, is authorized to establish rules and regulations and cause adequate measures to be taken for the preservation of the natural objects within said park, and also for the protection of the timber from wanton depredation, the preservation of all kinds of game and fish, the punishment of trespassers, the removal of unlawful occupants and intruders, and the prevention and extinguishment of forest fires.

In the deficiency appropriation act of July 1, 1902, an appropriation of $2,000 for the protection and improvement of the park and the repair and extension of roads therein was made. Thereafter W. F. Arant, of Klamath Falls, Oreg., was appointed superintendent of the reservation, at a compensation of $900 per annum, and rules and regulations for the government of the park were promulgated, copy of which is hereto appended (pp. 226–228, Exhibit M), and a suitable number of copies thereof were forwarded to the superintendent for his guidance and distribution among tourists in the reservation.

The act setting aside these lands for park purposes differed from the acts of Congress creating other national parks in that it provided, among other things, that the reservation should be open "to the location of mining claims and the working of the same." It was not

believed, however, to be the purpose of this provision to extend the mining laws to the reservation without limitation, but only to authorize the location and working of mining claims thereon in such manner as not to interfere with, or prejudicially affect, the general purpose for which the reservation was established. The regulations for the government of the park clearly define the conditions under which this privilege is to be exercised.

The superintendent reports that he has established headquarters in the park at a place known as Bridge Creek Springs, about 6 miles from the Crater; that he visited the lake and the principal camping places in the reservation, and found a large number of campers. No forest fires were found burning in the reservation, no timber is being cut, or other property in the park destroyed. He states that in conversation with those camping and traveling through the park he finds that there is a strong sentiment among them in favor of preserving the natural picturesqueness of the reservation and that all are generally disposed to protect rather than to destroy.

A plan has been approved for the construction of a new road along the base of the Crater Lake Mountain to the rim of the crater, a distance of approximately 5 miles, and work thereon will be commenced as soon as weather conditions will permit.

Steps have also been taken looking to the survey and the marking of the boundaries of the park. Work thereon will be commenced under the supervision of an examiner of surveys of the General Land Office as soon as the surveying season opens next spring, and be vigorously prosecuted thereafter to completion.

An estimate of $3,000 has been submitted to Congress for the protection and improvement of this reservation during the next fiscal year.

Hot Springs Reservation.

The report of Martin A. Eisele, superintendent of the Hot Springs Reservation, shows that the success of the Hot Springs as a health resort since the assumption of supervisory control by the Government in 1878 has been remarkable. The increase in patronage has been constant year by year, attesting the virtues of the healing waters, whose fame and curative properties are heralded as the healing fountains of health. During this period of twenty-four years the superintendent estimates that a total of 650,000 people have visited Hot Springs for health and recreation; the patronage of the year just ended was 65,000, eclipsing all former records. The total number of baths given during the year was 673,679, which must be considered in the nature of a substantial testimonial to the efficacy of the waters. The knowledge that this reservation is the property of the United States, and under the management of its officers, causes intense satisfaction and gratification

among its patrons, who evince a sense of personal and patriotic pride and proprietary interest in it. The fame of the waters has caused a corresponding increase in the development and growth of the city of Hot Springs, which during the period covered by Government supervision has made rapid and creditable advancement. The resident population is now estimated at 12,000, and has all the appurtenances of a modern city, including metropolitan police system, fire department, electric street railroad, electric lighting and gas, sewer system, schools and churches, and its extensive hotel capacity probably exceeds that of any similar resort, and offers all grades of accommodation and entertainment at rates which are adjusted to the financial resources and inclination of the individual. The title to the Hot Springs was originally acquired through the Louisiana Purchase of April 30, 1803, and still further strengthened by the treaty made with the Quapaw Indians, August 24, 1818, which ceded to the United States all lands south of the Arkansas River.

By the act of April 20, 1832 (4 Stat. L., 505), the hot springs in Arkansas, together with four sections of land including such springs, were set aside and reserved for the future disposal of the United States.

By the act of March 3, 1877 (19 Stat. L., 378), the appointment of commissioners was authorized to lay out into squares, blocks, lots, avenues, and streets certain tracts of land in the county of Garland, State of Arkansas, known as Hot Springs Reservation; the appointment of a superintendent thereof by the Secretary of the Interior was provided for and the levying of a tax on water taken from the hot springs authorized, the proceeds to be used in improvement of the reservation.

By the act of June 16, 1880 (21 Stat. L., 288), the mountainous districts known as North Mountain, Sugar Loaf Mountain, and West Mountain, together with Hot Springs Mountain, were forever reserved from sale and dedicated to public use as parks. These reservations, with Whittington Avenue Reserve, comprise in all 911.63 acres.

The hot water issues from about 48 springs on the west side and base of Hot Springs Mountain. These springs are mostly inclosed, for the purpose of protecting them from pollution, as well as to permit of the conveyance of the water therefrom to the several bath houses and the impounding reservoir. The actual amount of water issuing from the springs is not known, as a large quantity is not under control. A conservative estimate, however, of the outflow of the springs may be stated to be 850,000 gallons daily.

The official analysis which has been in progress since the autumn of 1900 has been completed and the results made public, together with a geological survey of Hot Springs Mountain. The demand for official and authentic information concerning the action and properties of the

waters has impressed its importance upon all the superintendents who have had charge of the reservation, and several recommendations for an analysis have been made. In recognition of the importance to both the public and the Government the Department authorized the making of this analysis, and also a geological survey of Hot Springs Mountain. This analysis has been completed by the Bureau of Chemistry of the Agricultural Department, the detail being assigned to Prof. J. K. Haywood, in charge of the laboratory of insecticides and agricultural waters, while the geological sketch of Hot Springs Mountain was prepared by Prof. Walter Harvey Weed, geologist of the United States Geological Survey. Being the only authorized work of this character, the report has been awaited with eager interest by the public, and requests for it are received from all parts of the country; and this demand reflects the confidence of the public in the integrity of scientific data furnished under authority of the Government. The work will prove of incalculable value in the information furnished concerning the chemical composition of the waters and the geological formation through which it passes in its route to the surface.

The source of the heat of the waters of the Hot Springs has long been a disputed question. Professor Weed, in his report on the geological formation of the Hot Springs, in discussing the matter states:

> While there have been many theories advanced to account for the source of the hot waters, the only hypothesis that stands the test of scientific inquiry is the one which ascribes the heat of the waters to still hot but concealed bodies of igneous rock. It seems scarcely necessary to call attention to the absurdity of the idea that either slaking lime in the depths of the earth or chemical reaction of the waters with the atmosphere could be the cause of the heat. That the waters come from a depth sufficient for their heating by the normal increment of earth heat (1 for every 50 feet) seems unreasonable, since it would necessitate a depth of nearly 5,000 feet to give the waters their present temperature, even assuming that they were not cooled in their course upward. The composition of the gases given off by the waters shows that they contain atmospheric air as well as carbon dioxide. That the heat of the waters is due to the heat developed by the folding of the rocks, which is the theory given to account for the heat at the Virginia Hot Springs, is not probable, for the folding at Hot Springs is not more intense than elsewhere in the mountain regions of Arkansas, and no evidence of hot spring action has been found at any other localities except where igneous rocks are present.
>
> It is believed that the heat comes from a great body of still heated igneous rocks intruded in the earth's crust by volcanic agencies and underlying a large part of central Arkansas. The existence of such a mass is shown by the great bodies of granite seen at Potash Sulphur Springs and Magnet Cove, where the rocks have been exposed by the wearing down of the overlying sediments, though the igneous rocks seen were of course long since cooled. At Magnet Cove, moreover, there are tufa deposits which show the former occurrence of hot springs.
>
> The hypothesis is strengthened by the occurrence of intrusive dikes at various localities about the springs, and their trend and occurrence indicate that the molten material which filled the fissures did not come from the bodies of rock now exposed at Potash Sulphur Springs or at Magnet Cove, but had some deep-seated source

whose location is indicated by the dikes as being approximately under the hot springs. Deep-seated waters converted into vapors by contact with this "batholith" of hot rock probably ascend through fissures toward the surface, where they probably meet cold spring waters which are heated by the vapors. As the igneous dikes near by are fissures reaching down to this great mass of igneous magma which have been filled by it to form dikes, it is not unreasonable to suppose that fissures extend down to the now solid but still hot igneous mass.

There are 25 leases providing for the use of land and hot water on the Hot Springs Reservation. Of these, 21 are for operative bath houses; 2 are sanitariums; 1 for the Hot Springs Medical Company, for the use of hot water for manufacturing medicines, and 1 to John J. Sumpter; in the latter case the water is used principally for drinking purposes.

The total number of tubs covered by these leases is 529, requiring, on a basis of 1,000 gallons per tub daily, 548,000 gallons of hot water to supply them.

The following table shows the several individuals and corporations now holding leases for ground or hot water from the reservation, together with the date and the expiration of each lease:

Name of bath house.	Lessees.	Tubs.	Date of lease.	Expiration of lease.
Alhambra	Alhambra Bath House Co	24	Feb. 28, 1894	Feb. 28, 1914
Arlington	Arlington Hotel Co	40	Mar. 3, 1892	Mar. 2, 1912
Avenue	Avenue Hotel Co	20	Feb. 17, 1898	Dec. 31, 1902
Ozark Sanatorium	Butterick Publishing Co	8	Sept. 16, 1893	Sept. 16, 1905
Eastman	New York Hotel Co	40	May 12, 1892	May 12, 1912
Great Northern	Curnel S. Williamson	19	May 25, 1897	May 15, 1912
Hale	Roots & Eastman	26	Jan. 1, 1893	Dec. 31, 1907
Horse Shoe	D. Fellows Platt	30	Jan. 1, 1895	Dec. 31, 1909
Hot Springs	Mark J. Smith	16	Jan. 1, 1893	Dec. 31, 1902
No house	Hot Springs Medical Co	4	July 24, 1894	July 24, 1904
Imperial	Fred N. Rix and Mary E. Barns	25	Jan. 1, 1902	Dec. 31, 1906
Lamar	M. C. Tombler and D. C. Buckstaff	40	Jan. 1, 1897	Dec. 31, 1919
Magnesia	Charles B. Platt	30	Jan. 1, 1895	Dec. 31, 1906
Maurice	Maurice, Convers, and Maurice	24	Jan. 1, 1897	Dec. 31, 1912
Ozark	I. W. Carhart and F. B. Latta	22	Jan. 1, 1892	Dec. 31, 1906
Palace	Samuel W. Fordyce	28	Jan. 12, 1893	Do.
Park	Park Hotel Company	40	May 12, 1892	May 12, 1912
Rector	Henry M. Rector	12	Apr. 16, 1894	Apr. 16, 1904
Rockafellow	Mahala J. Rockafellow	18	July 1, 1901	June 30, 1916
St. Joseph's Infirmary	Sister Mary Aloysius	4	Lease expired.	Dec. 31, 1901
Sumpter (no house)	John J. Sumpter	8	Mar. 7, 1894	Mar. 7, 1904
Superior	Robert Proctor and Chas. N. Rix	16	Sept. 15, 1896	Sept. 14, 1906
Waverly	New Waverly Hotel Co	20	Mar. 24, 1893	Mar. 24, 1913
Ramelsberg	Jeanette Hogaboom, Aaron H. and Milo R. Buckstaff.	18	Jan. 1, 1899	Jan. 1, 1909
Moody	Nicholas M. Moody	10	July 1, 1900	June 30, 1910

The prices which the different bath houses may charge for baths are subject to approval and revision by the Secretary of the Interior, and are in all cases regulated by the class of bathing accommodations each

house is in position to furnish, the newer and better-equipped houses being allowed to charge higher prices than those of less modern build and inferior equipment. The scale of prices in force at present are fixed prices, and may not be deviated from by any bath house. The price for a single bath ranges from 25 cents to 50 cents, and per course of 21 baths from $3 to $10.

During the year the business of the bath houses has been very prosperous, the volume thereof transacted exceeding that of former years. The total number of baths given during the year, including those at the United States free bath house, reached a total of 673,679. The total amount received for baths by lessees was $153,737.30. The report embodies a review of the various bath houses, with their equipment and present condition, and shows that improvements and betterments of the various properties have been the rule. The total receipts from bath houses, hot-water rents, etc., for the fiscal year ended June 30, 1902, was $18,145. The disbursements by the superintendent for salaries, incidental expenses, and fixed charges for maintaining the reservation were $15,213.37. At the free bath house a total of 186,880 baths were furnished to indigent persons; 4,783 persons are reported to have been benefited, 1,197 were discharged as cured. The total number of bathers was 8,809; of these, 6,503 were white men, 588 were white women; 1,102 colored men and 616 colored women. Three hundred and forty applications were denied. The expense for operating the bath house during the year amounted to $2,417.95, a net cost to the Government per bath of 1.29 cents. Under instructions from the Department, plans have been submitted for a new free bath house to be erected under an appropriation of $25,000 therefor, made in the sundry civil act of June 28, 1902. Work thereon will be commenced early in the spring of 1903, and during the period of construction the indigent will be provided with baths in a temporary house to be erected for the purpose.

The principal improvements during the year, aside from repairs to roads, walks, springs, pipe connections, cultivation of shrubberies, flowers, etc., consisted in the installation of a steam-heating plant at the free bath house and the relocation of a hot-water supply pipe line thereto, the location and marking by suitable stone monuments of each hot spring on the reservation and the making of a plat of the location of the hot springs, and the various pipe lines for conducting the hot water to the bath houses and reservoirs, with valves, stopcocks, etc. This plat will be invaluable in the future administration of the reservation.

The superintendent reviews at length the history of the collection of the hot water from the springs and its distribution to the various bath houses, and recommends, as the flow of hot water by gravity is now practically all assigned, that the number of storage reservoirs

be increased, so that the hot water which now runs to waste by flowing off under the ground at low levels can be collected and utilized in emergencies by pumping from these deep reservoirs. To carry the same into effect he recommends that Congress appropriate therefor the sum of $10,000. The small reservation belonging to the Government in the city of Hot Springs, known as Whittington Lake Reserve Park, has been kept in good condition and is very popular with the visitors. The superintendent states that, in his judgment, the providing of lakes in this small park was an error; that by reason of the insufficiency of the water supply of the small stream that feeds these lakes during certain portions of the year the water becomes stagnant, giving off bad odors and bringing about malarious conditions which have been the subject of consideration at various times by the city board of health. He recommends that the lake be filled up with earth and made a part of the park proper; that an appropriation of $6,000 be made for the purpose.

The superintendent also recommends that the act of Congress approved March 3, 1891, relative to the leasing of bath houses on the Hot Springs Reservation be so amended as to authorize the Secretary of the Interior to regulate the water rentals at any time, instead of at the expiration of every period of five years as is provided by existing law; furthermore, that such law be also amended by abrogating the 40-tub limit now provided for and extending the limit to 50, 75, or 100 tubs, in the discretion of the Secretary of the Interior, with a view to placing tubs in private rooms of hotels having bath houses attached. This suggestion and recommendation, he states, is made with a view to increasing the revenues of the reservation as well as the comforts, benefits, and conveniences of the public. The demand for private baths supplied with hot water from the reservation during the past year has been very great. The Hot Springs Creek arch which was constructed by the Government in 1884, at the junction of Whittington and Park avenues on the north and Malvern avenue on the south, and which is under Bath House Park, is in good condition and requires no repairs at this time.

The act of Congress approved March 3, 1877, entitled "An act in relation to the Hot Springs Reservation in the State of Arkansas" (19 Stat. L., 380), provides, section 19:

> That a suitable tract of land, not exceeding five acres, shall be laid off by said commissioners, and the same is hereby granted to the county of Garland, in the State of Arkansas, as a site for the public building of said county: *Provided*, That the tract of land hereby granted shall not be taken from the land reserved herein for the use of the United States.

Pursuant to the provisions of this statute, there was set apart by the Hot Springs commissioners 3.62 acres of land, known as block 114, in the city of Hot Springs, and the same was dedicated as the

land granted by the United States, in the county of Garland, in the city of Hot Springs, as a site for a public building. The county, however, never occupied any of the land so dedicated, but located its courthouse and jail at a considerable distance therefrom on other land.

I renew the recommendation contained in my last annual report, that Congress repeal section 19 of the act above mentioned for failure on the part of the county of Garland to use the land granted for the purposes specified in the act, and that the same be disposed of at public sale in the same manner as other lots belonging to the Government in the city of Hot Springs are disposed of, the proceeds of such sale to be applied, as required by existing law, to the management and protection of the reservation.

The act of Congress approved March 3, 1901 (31 Stat. L., 1188), making appropriations for the sundry civil expenses of the Government for the fiscal year ending June 30, 1902, and for other purposes, provides, among other things:

SEC. 4. That the Secretary of the Interior be, and is hereby, authorized and directed to determine the value of certain condemned buildings formerly located on Hot Springs Mountain Reservation, and on the east side of Valley street, in the city of Hot Springs, in the State of Arkansas, which buildings were condemned by the Hot Springs Commission, and proof of value taken by said commission, under authority of law, and which were destroyed by fire on the night of the fifth day of March, eighteen hundred and seventy-seven, before said commission had issued certificates for the value thereof, as they were authorized and directed, and did afterwards do for buildings similarly situated, but not burned. That the value of each building so condemned and burned shall be determined by the Secretary from the petitions and evidence filed before said commission by the owners or occupiers thereof, by order of said commission, and now on file in the Interior Department, or such other evidence as the claimants may file, and after such investigation as he may think proper.

SEC. 5. That a sum of money sufficient to pay for such investigation and the claims so ascertained and fixed by the Secretary of the Interior be, and is hereby, appropriated, out of any money in the Treasury not otherwise appropriated; and the Secretary of the Interior is hereby authorized and directed to pay to such person or persons, claimants, their executors, administrators, the sum or sums of money equal to the values so as aforesaid found by him.

SEC. 6. That the Secretary of the Interior is required to report to Congress the results of his action under the foregoing sections.

Pursuant to the requirements of the statute I have to report that 23 claims were presented thereunder, 5 were allowed during the period covered by my last annual report, leaving 18 pending at that time. During the past year 1 claim, that of Leo Myer, was dismissed, and 3 were allowed, to wit, Jacob Karatofsky, $3,000; James Riddell, $700, and the estate of James G. Allen, deceased, late of Hot Springs, Ark., $1,000.

CASA GRANDE RUIN.

This ruin is one of the most noteworthy relics of a prehistoric age and people living within the limits of the United States. At the date of discovery by one Padre Kino, in 1694, it was in a ruinous condition,

and since that time has been a subject of record by explorers and historians. The structure is built of the material known as cajon—that is, puddled clay molded into walls and dried in the sun, and of perishable character.

The Casa Grande Ruin Reservation is located in Pinal County, Ariz., and embraces the S. ½, SW. ¼, SW. ¼, SE. ¼ sec. 9; NW. ¼, W. ½, NE. ¼, NE. ½, SW. ¼ and NW. ¼, SE. ¼ sec. 16, T. 5 S., R. 8 E., Gila and Salt River meridian. The lands embraced therein were reserved from settlement by Executive order dated June 22, 1892, under authority of an act of Congress approved March 2, 1889. By this act $2,000 was appropriated for the repairing and preservation of the ruin, and was expended in removing débris, supplying underpinning to the walls, filling cavities, and fixing in place wooden and iron braces as supports. These repairs the custodian, Frank Pinkley, who resides on the reservation, states are in excellent condition, but the appropriation was not sufficient to fully provide for the preservation of the ruin.

At the present time it is stated there is need of renewing the lintels over doors and windows. The floors of the building having been destroyed by fire, the walls have been unsupported for their entire height, and becoming weatherworn near the ground need proper underpinning in places to keep them standing. The northeastern and southeastern corners of the ruin have fallen, but the remaining walls are standing with a fair degree of stability, and if properly preserved will remain intact for several generations.

At the last session of Congress $2,000 was appropriated for repairs to this ruin. Specifications for the work are now in course of preparation, and before the close of the fiscal year it is believed that the work of strengthening the building will be completed. An additional appropriation is desirable in order that a roof of asphalt or corrugated iron can be placed over the structure, and the ruin be inclosed by a barbed-wire fence in order to more effectively exclude trespassers.

ELEEMOSYNARY INSTITUTIONS.

The act of Congress entitled "An act to establish a board of charities for the District of Columbia," approved June 6, 1900 (31 Stat., 664), provides, among other things, that said board of charities —

shall visit, inspect, and maintain a general supervision over all institutions, societies, or associations of a charitable, eleemosynary, correctional, or reformatory character, which are supported in whole or in part by appropriations of Congress made for the care or treatment of residents of the District of Columbia; and no payment shall be made to any such charitable, eleemosynary, correctional, or reformatory institution for any resident of the District of Columbia who is not received and maintained therein pursuant to the rules established by such board of charities, except in the case of persons committed by the courts, or abandoned infants needing immediate care.

The Attorney-General on the 12th of October, 1909, in construing this act, held that the Government Hospital for the Insane, Freedmen's Hospital, the Columbian Institution for Deaf and Dumb, and the Washington Hospital for Foundlings, created by prior laws and placed under the supervision of the Secretary of the Interior, came within the terms of said act of June 6, 1900, and that—

with the exception that the board of charities is given the general supervision of these institutions and, under the order of the District Commissioners, the power of investigation, with the duty of submitting a report and recommendations to Congress, the powers and duties of the Secretary of the Interior are unchanged by the act of June 6, 1900, and remain the same as before its enactment.

Attention has been directed in previous annual reports to the fact that a divided supervision or control over the class of institutions enumerated, especially where the lines of division are uncertain and not easily understood, would have a tendency to embarrass the immediate management of each institution and to detract materially from the desired standard of excellence. I therefore renew the recommendation heretofore made in this matter that as to each of said institutions the authority, etc., of the Board of Charities be transferred to the Secretary of the Interior, or the authority and responsibility of the Secretary of the Interior be transferred to the Board of Charities.

Considering the character and purpose of each institution and the extent of the supervisory authority of the Secretary of the Interior over the same prior to the passage of the above-mentioned act, probably the best results could be obtained if the administration of the affairs of the Government Hospital for the Insane, Freedmen's Hospital, and the Washington Hospital for Foundlings were placed exclusively under the supervision of the Secretary of the Interior.

During the first session of the Fifty-seventh Congress a bill (H. R. 10372), copy of which is hereto appended, page 229 (Exhibit N), in accord with the above recommendations, passed the House of Representatives on the 24th of February, 1902, and it is to be hoped that it will receive early and favorable consideration in the Senate.

The Government Hospital for the Insane.

The annual report of the board of visitors shows that no untoward incidents have occurred during the year, and that the affairs of the hospital have continued to be satisfactory. The health of the people at the institution has been ordinarily good, with the exception of a few cases of typhoid fever during the fall of 1901. The water supply and the milk supply of the hospital were bacteriologically examined, but no evidence of infection from those sources was found.

The number of patients in the hospital at the beginning of the year was 2,176; there were admitted during the year 686, the largest num-

ber in the history of the hospital, making a total under treatment of 2,862. During the year there were 177 deaths; 248 were discharged recovered, 98 improved, 20 unimproved, 3 not insane, leaving on the records at the close of the year 2,316. Of those received during the year, 297 were from the Army and Navy and Marine-Hospital Service, and 389 from civil life. Of the latter, 285 were cases of indigent patients, residents of the District of Columbia, and 51 were nonresidents, admitted by order of the district courts. The recoveries number 248, or 36.15 per cent of the admissions, and the deaths 177, or 6.18 per cent of the whole number under treatment and 8.06 per cent of the average number resident.

The training school for nurses continues to do good service, a class of 30 having been graduated May 23, 1902. Most of the graduates remain in the service of the institution and are performing satisfactory service. Twelve female nurses are employed in the male hospital wards with satisfactory results. The nursing and care of the patients is receiving special attention, and there has been a steady improvement in the equipment of the hospital wards.

With the completion of the additional buildings authorized by Congress, and now being erected, the facilities for the special-care cases will be further enlarged. The improvements under way at the commencement of the last fiscal year have been satisfactorily completed. The old stable building has been removed and its location made into a lawn, enhancing the appearance of the park in the rear of the main building. Work has commenced on the reconstructing of the roads and walks of this portion of the grounds, and a considerable number is already completed. A new gas machine has been installed in the laundry and a ward for 40 colored female patients has been opened with satisfactory results in the old laundry building.

The constantly increasing number of patients has necessitated the erection of a temporary frame building to accommodate 120 male patients. It is hoped that these accommodations will tide over the institution until the completion of the buildings of the extension now under contract without much increase in inconvenience from overcrowding, which is highly undesirable, not to say hazardous. The new kitchen for the group of attached buildings has been completed and is in successful operation; the service of food to the general dining room adjoining, which seats about 600 patients, has been greatly improved.

Plans and specifications for the new heating and power plant for the hospital, for an administration building, for an additional kitchen for the Toner group of buildings, including three of the new cottages, have been prepared and approved by the Department, and it is hoped that the work thereon will be commenced early in the fall.

In the pathological department during the year 92 post-mortem

examinations were made—about the usual proportion out of 177 deaths. The work in this branch has been greatly facilitated and made much more interesting and valuable by the synopsis of the clinical histories required to be sent with each case for examination. During the past year many very interesting cases have been examined and recorded for future study and many valuable specimens and photographs have been added to our collection. Two of the cases were of tumor of the brain, which have been added to the pathologist's work on intracranial growths, now numbering 29. The special work for the year has been the preparation of this work for publication. It will consist of 29 tumors and 1 aneurism of cerebral artery, illustrated by 28 plates and 62 microscopic drawings.

The clinico-pathological branch has been kept busy in the various lines of study. During the year 385 examinations of blood have been made. Of these, 288 were for the presence of the malarial parasite, with positive results in 95 cases. Thirty were for Widal's reaction in typhoid fever; the test was positive in 14 cases. Sputum examinations have been made in 93 cases, with the discovery of tubercle bacilli in 38 cases. Other examinations were in cases of essential anæmias, etc. Eight hundred and forty-six examinations of urine have been made, all new admissions being examined, and in clinical cases for records and confirmation of diagnosis. In cases coming to autopsy these urinary analyses are always consulted, and the conclusions reached are compared with the actual condition of the organs at the time of death.

Tests of the usual clinical character have been conducted with very satisfactory results, and the scope of the work is rapidly increasing; the equipment is sufficient and the work is thereby greatly facilitated; all that seems to be required now is increased laboratory space.

The board of visitors in discussing the legislative needs of the hospital state that—

> Your attention is also respectfully called to the necessity for amending the law relating to the disposition of pensions of patients who have been admitted to the hospital from the National Homes for Disabled Volunteer Soldiers who have no dependent relatives. The law now provides that in all such cases the pension shall be paid to the superintendent for the support of the patient and be credited to the general support appropriation without regard to the amount. When these pensions are credited to the general fund of the hospital they can not be used for the special benefit of the patient, and as the regular charge for board is $5 per week, the pension in some instances exceeds this amount. In all cases it is desirable that at least a portion of the pension should be available for special use of the patient for small purchases which the hospital can not ordinarily supply. It is therefore recommended that the law be so amended as to permit all pensions of patients to be paid to the superintendent while the pensioners are inmates of the hospital, and that he be authorized to use the pension, under regulations established by yourself, for the benefit, first, of any dependent relatives under the law, and second, for the patient himself, the regular charge for board alone being credited to the general fund of the hospital in such cases as may be determined to be proper. The law should also authorize the disposition of such funds accruing from this source in case of deceased

pensioners which are unclaimed, and of which a considerable amount is now accumulated.

This board is also impressed with the necessity for amendment to the law regulating commitment to the hospital and the discharge of patients therefrom. It is particularly important that authority be given the superintendent to grant trial visits before discharge to such patients as are believed to be in condition to warrant it, and also to discharge to the custody of friends such as can be safely cared for outside of a hospital and who can not be further benefited by hospital treatment.

In my last annual report I called attention to similar recommendations submitted by the board of visitors, and recommended that legislation be enacted by Congress along the lines indicated. Subsequently, in April of 1902, I prepared and transmitted to the Senate and House Committees on Pensions, respectively, a draft of bill copy of which is hereto appended, pages 229, 230 (Exhibit O) in relation to the payment and disposition of pension moneys due to inmates of the Government Hospital for the Insane. I earnestly recommend that this measure be enacted into law at the earliest practicable date.

In discussing the matter of the change in the law relative to disbursement of moneys for the Government Hospital for the Insane, I stated in my last annual report that—

After the decease of the former superintendent a committee was appointed to examine his books and accounts as a disbursing agent of the institution. In reporting thereon, after referring to the fact that his accounts were found to be correct, balanced, and closed, and so reported by the accounting officers of the Treasury, they state, referring to the matter of the disbursements of the institution, that—

"Your committee are of the opinion, however, that the best interests of the public service would be subserved if the disbursement of the appropriations for the hospital was taken therefrom and placed under the direct supervision of the Secretary of the Interior, to be disbursed by the disbursing officer of the Department of the Interior on vouchers properly certified by the superintendent of the hospital, and approved by the Secretary of the Interior. One of the principal reasons advanced why such a change should be made is that the superintendent of the hospital is now the purchasing officer, the receiving officer, the disbursing officer—three offices in one. The act of March 3, 1855 (sec. 4837, Rev. Stat.), made him a special disbursing agent. Under existing United States Treasury regulations he is required to render his accounts monthly, and no advance of funds is allowed him in any month in excess of his bond. On the contrary, the disbursing officer of the Department is required to render his accounts only quarterly, and is not confined to the limit of his bond in advances from the Treasury, so that money could always be promptly obtained from the Treasury for the payment of the bills of the hospital upon presentation of same. Under the present condition of affairs it has often occurred that persons selling goods and supplies to the hospital, expecting to receive cash when such have been furnished, have been compelled to wait weeks and months for payment. This condition of affairs should not be tolerated by the Department for a moment. Business methods prevail in every other branch of the Department of the Interior, and its creditors are promptly paid their bills on presentation of the same. Such should be the rule with the bills against the Hospital for the Insane. The merchant sells his goods to the hospital at a trifle above cost, expecting to receive promptly cash payment for the same. Failure to so pay him frequently results in serious embarrassment to his business."

Concurring in this conclusion, I urgently recommend the incorporation in the sundry civil bill, when it shall receive consideration by Congress, of the following paragraph, to wit:

And hereafter the disbursing clerk of the Department of the Interior is hereby required to act as disbursing clerk for the Government Hospital for the Insane, and to disburse all moneys appropriated for the said hospital, under the direction of the Secretary of the Interior, on vouchers duly certified by the superintendent thereof and approved by the Secretary of the Interior. And the said disbursing clerk herein provided for shall, before entering upon his duties as such, give bond to the United States in such sum as the Secretary of the Treasury may deem proper and necessary, which bond shall be conditioned that the said officer shall render a true and faithful account to the proper accounting officers of the Treasury quarter yearly of all moneys and properties which shall be received by him by virtue of his office, with sureties to be approved by the Solicitor of the Treasury. Such bond shall be filed in the office of the Secretary of the Treasury, to be by him put in suit upon any breach of the conditions thereof. And for this service to be performed the said disbursing clerk, hereinbefore provided for, shall receive for the faithful discharge of his duties an annual compensation of $1,000, payable from the appropriation for current expenses of the Government Hospital for the Insane. And all acts heretofore made by Congress that are inconsistent with the provisions of this act be, and the same are hereby, repealed.

The necessity for the change in the law above recommended in regard to disbursements is further evidenced by the fact that in order to prevent embarrassment in the matter of payments, under contract for the work on the extension, to be made from the appropriation of $975,000 for the extension of the Government Hospital for the Insane, it became necessary on the 10th day of August, 1901, to appoint Mr. George W. Evans, the disbursing officer of this Department, a "special disbursing agent for the erection of an extension at the Government Hospital for the Insane." For the disbursement of these moneys he was required by the Secretary of the Treasury to give an additional bond of $25,000, which was approved on the 18th day of October, 1901.

Freedmen's Hospital.

The Freedmen's Hospital was appropriated for and placed under control of the Secretary of War by act of March 3, 1871 (16 Stat. L., 506), and transferred to the Department of the Interior by act of June 23, 1874 (18 Stat. L., 223). The supervision and control of expenditure of appropriations was transferred to the Commissioners of the District of Columbia by act of March 3, 1893 (27 Stat. L., 551). The appointive and general administrative power, however, is still vested in the Secretary of the Interior.

The report of the hospital, submitted by A. F. Warfield, surgeon in chief, shows that the institution is prosperous, and the results obtained during the past year have been gratifying. The total number of patients treated within the hospital and dispensaries during

the year was 7,932, a decrease over the previous year of 424. The number remaining in the hospital June 30, 1901, was 127. During the year 2,408 patients were admitted, divided as follows: Colored males, 1,065; white males, 181; colored females, 958; white females, 21. One hundred and eighty-three births were recorded, making a total of 2,535 in the hospital; 2,240, including 194 deaths, were discharged, leaving 112 remaining in the hospital on the 30th of June, 1902. Five thousand three hundred and ninty-seven out-patients were treated during the year. Of that number, 3,879 received attention in the medical, 1,030 in the surgical, 203 in the gynecological, and 285 in the eye and ear departments.

In the surgical department, 523 operations were performed, of which number 46 were abdominal.

Of the 194 deaths, 30 died within 24 hours after entering the hospital, 47 within 5 days, and 30 within 10 days, indicating that many persons defer coming to the hospital until their cases are practically hopeless.

Much attention has been given during the year to the improvement of the medical service of the institution, in the line of providing facilities as far as the appropriation permitted.

Of the 2,408 patients admitted, 1,792 were actual residents of the District of Columbia; that is to say, they had resided in the District more than one year; the remaining 433 lived in the District less than one year and are regarded as nonresidents.

The rules governing admission to the hospital are as follows, to wit:

(1) Indigent residents of the District of Columbia, who, being sick or injured and requiring medical or surgical attention, are without the necessary means to pay for the same.

(2) Transient population of said District, who, while passing through or temporarily domiciled therein, fall ill or suffer accident or injury, and require immediate medical or surgical care and attention, but are destitute of means to pay for the same.

(3) Such other destitute persons residing outside the District of Columbia as the Secretary of the Interior, either for humane reasons or in the interest of medical science, shall cause to be admitted.

(4) All emergency cases which are defined as cases of sudden illness or injury, where to delay treatment would unduly imperil the life or safety of the patient.

Under these rules, 176 applicants at the hospital were denied admission for the reason that they were nonresidents of the District of Columbia. This number, however, does not include those residing in various States and making application for admission to the hospital by letter. The surgeon in chief expresses the opinion that as the General Government bears one-half the expenses of the maintenance of the hospital it would be just and equitable to admit a larger number of persons from the States, and to that end suggests a modification of the rules.

The training school for nurses is doing good work; 202 applications were received during the year for admission to the school; 18 were accepted, 1 dismissed; 13 nurses graduated in May, 1902. The appendix to the report contains interesting information in regard to the school, the requirements exacted of the candidates desiring to enter, the course of training, and the work accomplished.

During the year a pathological laboratory has been established, fitted with modern appliances so that proper methods of scientific investigation and diagnosing can be made with equal advantage to the medical and surgical departments. A new floor, furniture, and files have been provided in the clerk's office; and a case has been provided for preserving the clinical records of patients, which are being indexed by the card system, making valuable statistical information easily obtainable. These improvements have been made possible through the saving effected by securing through the Department the remission of the internal-revenue tax on alcohol and whisky used in the hospital, amounting to some $400 or $500.

The visiting staff of physicians to the hospital has been reorganized during the year; the members thereof have evinced more interest and attended more regularly than in any previous year.

The surgeon in chief recommends an appropriation of $1,500 for a modern boiler in the engine room, new ranges in the kitchen, and a laundry outfit. He also reiterates former recommendations for the construction of new buildings for the hospital.

Fifty-four thousand dollars was appropriated by Congress for the management of this institution during the past year, one half of which under existing laws is payable from the funds of the District of Columbia, the other half being paid by the United States.

The dual control of this hospital still continues, the expenditure of funds appropriated by Congress for its management being under the control of the Commissioners of the District of Columbia and the appointive and chief administrative authority being vested in the Secretary of the Interior. Better administrative results would, without doubt, be secured by a unification of the supervision of this hospital, both fiscal and administrative.

The board of visitors to this hospital, in their report as to the annual inspection of the institution, state, among other things, that—

The whole number of patients admitted during the year was 2,408, with the addition of 127 remaining July 1, 1901, making a total of 2,535 treated during the year, of whom 1,792 purport to have been actual residents of the District of Columbia. Experience shows, however, that a liberal proportion of these were not bona fide residents of the District, not having perfected a residence here, but representing themselves as such so as to secure the privileges and benefits of this hospital. Such information has, in most cases, been secured from the patients themselves, after their admission, and when it would be inhuman to remove them. We mention this by way of emphasizing the fact that the bulk of the 2,535 patients treated are not

residents of the District, as has been intimated sometimes in support of the plea that this hospital should become an annex of the municipal hospital of the District, because its patients are largely from the District.

As long as this hospital is maintained as an independent institution, caring principally for colored indigent District transients, the justice of imposing upon the District the duty of defraying one-half of its expenses is questionable. I accordingly renew the recommendations in previous annual reports, that the law be so amended as to provide that the whole expense of the maintenance of Freedmen's Hospital and Asylum be borne by the United States, and that the Commissioners of the District of Columbia be authorized to enter into a contract with the Secretary of the Interior for the care, at such rate per capita as may be determined upon, of all persons from the District admitted to the hospital for treatment. During the first session of the 57th Congress a bill, H. R. 10372, copy of which is hereto appended, page 229 (Exhibit N), in accord with the above recommendations, passed the House of Representatives February 24, 1902, and it is to be hoped that it will receive early and favorable consideration in the Senate.

Howard University.

The president of Howard University, J. E. Rankin, D. D., reports that the growth of the institution has been greater than ever before.

The total number of students who entered the several departments aggregated 944, from forty different States and Territories and from ten foreign countries. Of that number 53 withdrew for various causes before the end of the year.

There are 8 practical working departments connected with the university—the English, which is designed to fit pupils for intelligent citizenship and practical business, in which 140 students were in attendance; the preparatory, which fits pupils for college, 144 students; the collegiate department where pupils are classified as in other American colleges, 42 students; the teachers' college for training teachers, 170 students, of which number 68 are teachers in the practice schools. It is worthy of note that over 60 teachers of the public schools are taking courses in this department.

In the medical department, which includes the dental and pharmaceutical courses, there were 221 enrolled, and 51 graduates.

In the law department 96 pupils were enrolled; 20 were graduated with the degree of LL. B. The studentship in this department well attested the national and international character of the school, in that both sexes, all creeds and well-nigh all races entered into its composition. There were students from nearly every State and Territory in the Union, and still others from Japan, South America, and the West Indies.

In the theological department 61 entered. There are three courses: a classical, an English day course, and an English night course. Those in the classical course study the Scriptures in the original. The attendance has been larger than ever before, and good work done by the graduates in the various denominations. About nine-tenths support themselves as waiters, barbers, watchmen, and the like employment. The graduates of this department are frequently called to responsible positions.

In industrial work, instruction is given in carpentry, tinning, printing, bookbinding, sewing, cooking, as well as theoretical and practical agriculture. Very elegant work has come from the printing office.

The trustees ask an appropriation of $750 for the salary of an additional teacher in the teachers' college department.

In accordance with a recommendation contained in my last annual report, Congress appropriated $5,000 for the purchase and installation of a steam-heating system for Miner Hall and Clark Hall. There was also an increase of $1,500 over the previous appropriation for salaries to provide for normal instruction.

Columbia Institution for the Deaf and Dumb.

The report of Dr. E. M. Gallaudet, president of the Columbia Institution for the Deaf and Dumb, made pursuant to the requirements of the act of February 16, 1857 (11 Stat. L., 161), shows that the pupils remaining in the institution July 1, 1901, numbered 121; admitted during the year, 41; since admitted, 38; total, 200. Of these, 136 have been in the collegiate department, representing 28 States, the District of Columbia, Canada, and Ireland, and 64 in the primary department. Forty-four of these pupils were admitted as beneficiaries from the District of Columbia, and 83 have been admitted to the collegiate department under the acts of Congress approved August 30, 1890, and June 6, 1900, which provided for an increase in the number of free scholarships in the institution.

General good health has prevailed among the students and pupils during the year.

The courses of instruction have been somewhat enlarged by the addition of opportunities for technical study, which have enabled a number of the students to pursue civil engineering, mechanical drawing, analytic geometry, calculus, strength of materials, leveling, and railroad surveying.

Opportunity for improvement in speech and speech reading has been offered to all pupils of the college and pupils of the school. A large majority have taken advantage of the training so offered them.

Experiments have been made with the akoulalion, an instrument combining the principles of the graphophone, microphone, and the

telephone, which is calculated to increase the hearing power of those who are very deaf. The results obtained are encouraging, but definite reports can not be made until after the conclusion of experiments now in progress.

At the close of the college year 22 students were graduated with bachelors' degrees. This is a larger number than has ever before been graduated from the college at any one time.

The institution has received medals and diplomas of merit from the Paris Exposition of 1900, the Buffalo Exposition of 1901, and the South Carolina Interstate and West Indian Exposition of 1901–2.

The receipts of the institution from all sources during the year amounted to $77,980.06 and the expenditures to $77,881.59.

Estimates for the current expenses of next year are submitted, amounting to $72,000, and an estimate is also submitted of $30,000 for additions to the buildings of the institution, to meet very pressing needs owing to the steady increase in the numbers of the students and pupils during the last few years.

Maryland School for the Blind.

Under section 2 of the act of Congress approved May 29, 1858 (11 Stat. L., 294), the Secretary of the Interior is authorized to place for instruction in an institution for the blind, in the State of Maryland or some other State, the indigent blind children of teachable age who are children of persons actually engaged in the military and naval service of the United States, and under section 4869 of the Revised Statutes, the indigent blind children of teachable age belonging to the District of Columbia.

The report of Dr. F. J. Morrison, superintendent of the institution, shows that in pursuance of this authority there were, at the close of the fiscal year 1901, 25 blind children under instruction in the Maryland School for the Blind, at Baltimore, Md. Since that time 2 pupils have been admitted and 3 discharged, leaving 24 beneficiaries at the institution on the 30th of June, 1902. With one or two exceptions, the 24 pupils remaining under instruction are very promising and are making excellent progress.

The course of instruction embraces all the branches taught in the public schools, also a thorough training in music—theory, harmony, and instrumental. The handicraft department includes such trades as are best adapted to the blind—piano tuning, mattress making, and broom making for the boys, and sewing (plain and machine), knitting, and fancy work for the girls. The school is equipped with every necessary appliance for the proper instruction and training of the pupils. Careful attention is paid to their physical development. There has been added during the past year a complete physical laboratory. The

advanced pupils use the Smith Premier typewriter in their work with nearly the same facility as persons having their sight. There is a library of over 2,500 volumes of embossed books, for the use of the blind.

The total amount expended during the year for the care and maintenance of the indigent blind children of the District of Columbia was $7,399.99, one-half of which amount is paid from the revenues of the District of Columbia and the other half out of the Treasury of the United States, pursuant to the act of Congress approved March 3, 1899 (30 Stat. L., 1101). The total amount expended during the fiscal year ended June 80, 1901, was $6,937.50.

Washington Hospital for Foundlings.

This institution is under the care of a corporation created by the act of April 22, 1870, to carry into effect that provision in the last will and testament of Joshua Pierce, devising to certain trustees 14 parcels of land in the city of Washington, D. C., to be held as a site for a hospital for the reception and care of destitute and friendless children. It is managed by a board of directors, who are required to report annually to the Secretary of the Interior, and is supported in part by contributions from benevolent persons and societies and in part by appropriations by Congress.

The report of the board of directors shows that 92 children were provided for during the fiscal year ended June 30, 1902, of which number 39 were remaining in the institution from the previous year.

The adoptions for the year were 24; 1 was transferred, and 39 deaths were recorded. Of the latter, 26 were under 6 months of age, 33 were under 9 months, 2 were 10 months, and 4 were 1 year old, leaving 30 remaining at the hospital at the end of the fiscal year 1902.

Including a balance of $7.07 from last year, the total receipts from all sources were $8,312.35, of which amount $8,101.04 was expended in the operation of the institution, leaving a cash balance of $211.31 on June 30, 1902.

The daily average of children is about 35. Since the hospital opened in 1887 there have been 199 little ones adopted into happy homes, where they will be trained to become useful men and women. This is considered the best and most satisfactory work of the institution.

Owing to stress of circumstances, the board of directors state that they are compelled to ask a continuance of the annual appropriation of $6,000 in order to carry on this work of charity.

I most heartily approve of this charity, and recommend that Congress appropriate the funds desired, that the work of the hospital may be properly continued.

THE SUPERINTENDENT OF THE UNITED STATES CAPITOL BUILDING AND GROUNDS.

The Superintendent of the United States Capitol Building and Grounds, Elliott Woods, in his annual report of the operations of his office, sets forth in detail the various improvements and repairs made to the Capitol and other buildings under his supervision during the past fiscal year.

An improved system of ventilation has been installed in the House of Representatives, the operation of which during the past session of Congress has been successful. The Hall has been entirely refurnished with new desks, 400 sections being provided to meet the membership, due to the new apportionment. The cloak rooms and lobby of the House have been newly furnished and the file room refitted with modern steel file and other cases.

The new committee rooms in the space formerly occupied by the Library of Congress have been furnished and decorated with special designs characteristic of the subjects considered by the several committees. The sum of $32,404.23 was expended for this work.

The Senate document room has been entirely refitted with modern steel file cases and shelving. Steel book shelving has been installed in the space under the new roof. The main room of the stationery rooms of the Senate has been refitted with new steel case work suitably arranged.

The explosion and fire which occurred in the Supreme Court section November 6, 1898, brought to the attention of Congress the dangerous condition of the roof over the old part of the Capitol, and appropriation was made for a fireproof roof and other construction with a view to lessening the danger from fires. The new roof has been completed, covering the Supreme Court and Statuary Hall wings and the west central portion of the Capitol. It is constructed of steel and concrete, covered with copper. The ceiling of the Supreme Court room has been reconstructed and made fireproof in the strongest possible manner. The style and outline of the old work has been retained, and in effect duplicates it.

In the process of reconstruction the combination of echoes in the old Hall—always an interesting feature to visitors—was carefully preserved, though somewhat diminished in strength.

The grounds surrounding the Capitol present a more attractive appearance, due to skillful treatment of the lawns. The beauty of the grotto has been increased by electric lighting and the planting of ferns and other plants. The oval bronze vases at the east front of the Capitol have been transformed from flower vases to fountain bowls

overflowing with water into receptacles below. These fountains meet with the approval of the general public. The engine house and stables have been repaired.

At the court-house a 7½-horsepower 220-volt electric motor has been installed for running ventilating fans, and several of the rooms repaired.

In the Botanic Garden repairs have been made to the walks, the conservatory, and other buildings.

The Court of Claims building, formerly the Corcoran Gallery of Art, has been greatly improved by the construction of an open area on three sides and the installation of an entire new system of sewerage and plumbing. The superintendent recommends further repairs and modifications to render the building suitable for its present purpose.

The expenditures for the fiscal year ended June 30, 1902, were as follows: Annual repairs of the Capitol, $66,875; reconstruction of central portion of Capitol, $153,000; improving the Capitol grounds, $20,400; lighting Capitol grounds, etc., $33,800; steam heating and machinery, $2,150; repairs to engine house, Senate and House stables, $1,500; repairs to Court of Claims building, $10,000; repairs to court-house of the District of Columbia, $1,950.

Appended to the report is a detailed statement relative to the extension of the Capitol building and the renovation of the Rotunda, accompanied by plans and illustrations relating to the reconstruction of the central portion of the Capitol.

THE SOUTH CAROLINA INTERSTATE AND WEST INDIAN EXPOSITION, CHARLESTON, S. C.

No appropriation was made by Congress for a Government exhibit at the South Carolina Interstate and West Indian Exposition at Charleston, S. C., prior to its opening on December 1, 1901. The exposition authorities regarded it as essential to the success of their undertaking that a Government exhibit be had, even if it were necessary to install it at their expense, and accordingly it was arranged that eight Departments of the Government should be represented. The plan originally outlined contemplated the use of the material which had been displayed at the Pan-American Exposition at Buffalo. Neither the money available for the purpose nor the space assigned for the exhibit at the Charleston Exposition was sufficient to provide for all the Buffalo exhibits, and it was therefore necessary to select only such parts thereof as were susceptible of economical installation. Twenty-five hundred dollars was set aside by the exposition authorities for the installation and maintenance of the exhibit of the Department of the Interior, and approximately 2,800 square feet of space was allotted for exhibition purposes.

As stated, the limited amount of money for this Department, as well as the lack of space, precluded the installation of operative machinery which contributed so much to the success of the Government exhibits at Buffalo and other expositions.

The exhibit of the Interior Department embraced four bureaus—the Geological Survey, the Patent Office, Indian Office, and the Bureau of Education.

The exhibit of the Geological Survey consisted of cases of specimens of minerals, fossils, plaster models, a display of topographic, hydrographic, and geologic maps on the walls, and a series of fine transparencies illustrating American scenery, which were placed before the windows on the front of the entire exhibit.

The Patent Office showed a large number of models. The processes of paper manufacture, specimens of electric welding, and mercerized cotton were shown.

The material in the Indian Office section consisted of industrial work from the Indian schools, a case of schoolroom exercises, photographs of school scenes, specimens of needlework, a pyramid covered with tinware, and iron and wood articles made by pupils at Carlisle, Pa., a minature house, a decorative inlaid column, and a few pieces of cabinet work done by Indians.

The Bureau of Education displayed a set of its publications, a series of graphic charts containing statistics of education, maps showing the location of educational institutions, pictures representing school punishments, a collection of ethnological specimens from Alaska, a mounted reindeer, sled, and driver, and a case of photographs of schools and of pupils in Alaska, Porto Rico, and the Philippines.

The exhibit was displayed in the wide, curved colonnade connecting the Cotton Palace with the Palace of Commerce. It was fairly lighted, and the effect was pleasing and attractive.

Congress by a joint resolution of January 21, 1902, appropriated $90,000 to reimburse the exposition for expenses incurred in the installation of the Government exhibit. The total expenditure for the Interior Department exhibit, exclusive of freight and transportation, for which no charge was made against the $2,500 allotted to the Department, was $2,398.37.

THE MARITIME CANAL COMPANY OF NICARAGUA.

Section 6 of the act of Congress approved February 20, 1889, entitled "An act to incorporate the Maritime Canal Company of Nicaragua," provides that said company shall make a report of its operations on the first Monday in December in each year to the Secretary of the Interior.

An advance copy of the report of this corporation, showing its present status, has been received and is hereto appended, pages 230–233 (marked "Exhibit P"). The official copy, it is stated, will be forwarded to the Department in time for transmission to Congress on the date prescribed by law.

THE COLUMBIA RAILWAY COMPANY, OF WASHINGTON, D. C.

The vice-president reports, in pursuance of the requirements of section 16 of the act of May 24, 1870 (16 Stat. L., 132), that the capital stock of the company is $400,000; that the par value of the shares is $50. The number of shares subscribed for up to the 31st day of December, 1901, is 8,000, of which 7,993 shares are held by the United States Mortgage and Trust Company, trustee.

The receipts from all sources during the year ended December 31 1900, were $217,904.61, and the total disbursements for the same time were $550,389.38. The report for the year ending December 31, 1901, shows that the receipts from all sources were $222,926.90, an increase over the preceding year, and that the disbursements for the same time were $443,908.39, a decrease over the preceding year.

This report, as well as the one for the previous year, affords no explanation whatever as to the excess of disbursements over the receipts, or from what fund the difference between the receipts and disbursements is paid.

The total amount of the funded debt is $1,000,000, the average rate of interest per annum thereon being 5 and 6 per cent. There is no floating debt.

The amount of dividends declared was $24,000, the same as the preceding year. The length of road is 7.75 miles. The length of double track, including sidings, is 6.94 miles. Total number of passengers carried in cars during the year was 8,027,781. Average time consumed by cars over road was fifty minutes on different divisions. Three of the sixty-one accidents occurring in 1901 resulted in the deaths of the persons injured.

Very respectfully,

ETHAN ALLEN HITCHCOCK,
Secretary.

The PRESIDENT.

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PAPERS

ACCOMPANYING

THE REPORT OF SECRETARY OF THE INTERIOR.

REPORT OF COMMISSIONER OF GENERAL LAND OFFICE.

DEPARTMENT OF THE INTERIOR,
GENERAL LAND OFFICE,
Washington, D. C., October 1, 1902.

SIR: I have the honor to submit the following as the annual report of this office for the fiscal year ended June 30, 1902, embracing tabulated statements of business done in the district land offices, 115 in number; reports from the surveyors-general, numbering 17, giving particulars of operations in their respective districts; and a statement of business transacted by the various divisions of this Bureau, with a résumé of the field service in depredations, surveys, and forestry work.

In my annual report for the fiscal year ended June 30, 1901, attention was called to the great increase in the business transacted—in the amount of lands disposed of and of cash received—which far exceeded the record for many years preceding. This report for the year 1902 shows an equally gratifying increase of business transacted over that reported for 1901.

INCREASE IN CASH RECEIPTS.

The cash receipts for the fiscal year 1902 amounted to $6,261,927.18, an increase over the preceding year of $1,289,766.39. The remarkable and steady increase in the cash receipts of the General Land Office since the fiscal year 1898 is summarized in the following statement:

The receipts during 1898 were $2,277,995.18, being less than the receipts during 1902 by $3,983,932. The receipts during 1899 were $3,070,137.34, being less than the receipts during 1902 by $3,191,789.84. Receipts during 1900 amounted to $4,379,758.10, being less than during 1902 by $1,882,169.08. Receipts during 1901 were $4,972,160.79, being less than the receipts during 1902 by $1,289,766.39.

INCREASE IN DISPOSALS OF PUBLIC LANDS.

A corresponding increase appears in the disposals of public lands. The total disposals during the fiscal year 1902 amounted to 19,488,535.30 acres, an increase over the preceding fiscal year of 3,925,739 acres. The increase in the amount of disposals in 1902 over past years since 1898, inclusive, is shown below:

The disposals during 1898 were 8,453,896.92 acres, being less than during 1902 by 11,034,638.38 acres. The disposals during 1899 were 9,182,413.16 acres, being less than during 1902 by 10,306,122.14 acres. The disposals during 1900 were 13,453,887.96 acres, less than during 1902 by 6,034,647.34 acres. The disposals during 1901 were 15,562,796.30 acres, being less than during 1902 by 3,925,739 acres.

INCREASED ORIGINAL HOMESTEADS.

The number of original homestead entries made during the fiscal year 1902 was 98,829, embracing 14,033,245.78 acres, a greater number of entries and a larger amount of land than in any preceding year, showing an increase as compared with the fiscal year 1901 of 30,181 entries and 4,555,970.73 acres. The increase over past years since 1898, inclusive, is summarized as follows:

The number of original homestead entries made during the fiscal year 1898, was 44,980, embracing 6,206,557.61 acres, being less than 1902 by 53,849 in number of entries and 7,826,688.17 in acres. During the fiscal year 1899 the number of entries made was 45,776, embracing 6,177,587.49 acres, being less than 1902 by 53,053 in number of entries and 7,855,658.29 in acres. During the fiscal year 1900 the number of entries made was 61,270, embracing 8,478,409.22 acres, being less than 1902 by 37,559 in number of entries and 5,554,836.56 in acres. During the fiscal year 1901 the number of entries made was 68,648, embracing 9,497,275.05 acres, being less than 1902 by 30,181 in number of entries and 4,535,970.73 in acres.

TOTAL HOMESTEADS.

While in the single item of final homestead entries made during the past year there was a decrease as compared with the fiscal year 1901 of 5,941 entries and 898,373.06 acres, it appears that the original homestead entries, final homestead entries, and commuted homestead entries made during the last fiscal year aggregated 188,445 in number and 19,481,844.24 in acres, an increase over the year 1901 of 77,055 in number and 4,026,786,78 in acres, a very gratifying exhibit of the appropriation of public lands for homes by American settlers for the fiscal year just passed.

RECEIPTS FROM DEPREDATIONS.

The total amount recovered during the past year from depredations committed upon public lands, including compromises, fines, judgments, settlements, and sales, aggregated $284,078.85, as against $261,573.84 for the previous year, an increase of $22,505.01. This is a greater amount than has ever before been recovered during the same length of time, and indicates a gratifying improvement in the efficiency of the force of special agents.

It is deemed worthy of mention here that this aggregate of $284,078.85 is nearly $100,000 in excess of the appropriation by Congress for the maintenance of the special agency force.

NET SURPLUS OF $4,380,338.78.

The aggregate receipts of the land service during the fiscal year 1902 were $6,261,927.18, and the aggregate expenditures and liabilities $1,881,588.40, leaving a net surplus in the United States Treasury of $4,380,338.78, being $1,221,897.11 more than the surplus for the fiscal year 1901

SWAMP LANDS.

The work of adjusting the swamp grant, both for lands in place and for indemnity, is progressing as rapidly as possible. The area patented to the States this year was 68,744.97 acres of swamp land in place and 19,893.78 acres land indemnity, making a total of 88,638.75

acres, a decrease of 127,325.11 acres as compared with the previous fiscal year. New claims for swamp land in place received during the year aggregated 158,407.27 acres, as against 138,344.59 acres the prior year, an increase of 20,062.68 acres. Claims to the amount of 142,754.60 acres of land in place and 82,400 acres of swamp-land indemnity were rejected during the year.

LAND SURVEYS.

A continued increase is shown in the acceptances of surveys. The area covered by surveys accepted by this office during the fiscal year ended June 30, 1902, was 9,267,978 acres. The area for the fiscal year 1900 was 7,567,282 acres, being 1,700,696 acres less, and for the fiscal year 1901 8,810,837 acres, being 457,141 acres less.

LAND PATENTS.

Parties who become entitled to public land under the laws for the disposal thereof naturally desire that patents be promptly issued, so that the legal title may vest in the claimant as early as practicable. Therefore, it is the aim of this office to expedite the issuance of patents, and accordingly during the fiscal year ended June 30, 1902, there were issued 50,019 patents, as against 47,408 the preceding fiscal year, an increase of 2,611.

It may be added that during the past year there were certified and patented under the several land grants made by Congress to aid in the construction of railroads and wagon roads 5,008,131.66 acres of land, an increase as compared with the preceding year of 2,371,779.93 acres. On the other hand there were 122,250.55 acres of railroad selections canceled during the year, as against 94,535.13 acres the year previous, and there were received selections covering 2,229,472.38 acres, as against 3,285,676.14 acres embraced in selections received during the previous year.

STATE SELECTIONS.

There were certified to the several States and Territories during the fiscal year ended June 30, 1902, lists of lands selected by them and approved by the Secretary of the Interior to the amount of 1,003,793.09 acres, as against 1,243,519.92 acres so certified during the fiscal year 1901, showing a decrease in the amount of lands certified of 239,726.83 acres.

DECISIONS IN CONTEST CASES.

During the fiscal year 1902 there were rendered 5,732 decisions in contest cases, appealed and unappealed, as against 4,934 for the previous year, an increase of 798 decisions.

MINERAL ENTRIES.

In mineral and coal entries there has been a material increase.

The mineral and mill-site patents issued during the year, 1,553 in number, embrace 3,331 mineral and mill-site claims and an area of 57,649.40 acres. This is an increase over previous year of 165 patents, 559 claims, and an area of 6,796.94 acres.

Of coal patents, 108 were issued, an increase of 4; the area patented, 12,799.10 acres, is an increase of 738.23 acres over the previous year.

INCREASED CORRESPONDENCE.

The correspondence of the General Land Office for the year shows a material increase over the preceding year. The communications received numbered 243,316, as against 232,240 for the year 1901, an increase of 11,076; while the decisions and letters written numbered 202,553, as against 173,412 for the previous year, an increase of 29,141.

ARREARAGE OF WORK.

A satisfactory showing is made with regard to the arrearage of work in the several divisions, considering the deficiency in the clerical force, an increase of which force is recommended in the estimate of appropriations given in another part of this report.

ACREAGE OF PUBLIC DOMAIN.

As will be seen elsewhere in this report, the acreage of the public domain is accounted for as follows:

	Acres.
Unappropriated and unreserved	893,955,476
Reserved	151,161,638
Appropriated	764,422,726
Total acreage	1,809,539,840

This includes Alaska and excludes our insular possessions.

INCOME FROM FOREST RESERVES.

There has been received from the sale of timber on forest reserves, and paid into the Treasury, the sum of $25,431.87. The amount of material benefit derived from the reserves, however, is not measured by the above amount. The people living in the vicinity of the reserves have been given over $10,000 worth of timber under the "free use" system, and over $100,000 worth of grazing privileges. It might be added that, with suitable legislation, several of the forest reserves could be put on a basis of self-support, and a considerable part of the entire outlay for reserve expenses could be derived from the sale of privileges of various kinds.

THE CLERICAL AND FIELD FORCE.

In regard to this subject, I can not do better than repeat here what was said in my last annual report, page 7, viz:

> I think it may be asserted with confidence that in the public-land States and Territories no class of business with the general government comes so close to the great mass of the people as that which relates to the public-lands administration, except, perhaps, the postal service. It is, therefore, expected that all those performing duties under the direction of this office should be most constantly under the public surveillance, and in cases of dereliction that there should follow a quick and earnest protest.
>
> The number of such officials in office and field, and who contributed in greater or lesser degree to the work recited in this report, aggregates 1,602, and most of them are distributed over the far distant and widely separated regions of the West, including Alaska. I must not omit to note that this increased work has been accomplished without any additional clerical force. If, therefore, no special mention were made herein of this laborious and conscientious body of men and women, an injustice would be done each one. I accordingly commend them in the strongest terms possible. The instances during the past year wherein charges were preferred for misconduct, I am glad to report were rare.
>
> Punctuality in attendance, studiousness in service, and uprightness in every duty imposed characterized the conduct of the office corps. The same deserving words are likewise extended to the large number of officials employed in surveyors-general and local land offices of the country, and to those in the field, whether upon the

remote forest reserves, upon the public surveys, or as special agents investigating violations of the land laws. To the intelligent and industrious efforts of all these people is the public service indebted for the increased showing made in the public-lands administration during the past fiscal year.

Where some few delinquencies have been discovered, either in the office force or in the field, including the forestry corps and the special agency service, prompt suspension or dismissal has been the result.

DISPOSAL OF PUBLIC LANDS.

The following is a statement of the acreage disposed of during the fiscal year ended June 30, 1902:

CASH SALES.

	Acres.
Private entries	19,105.13
Public auction	80,840.91
Preemption entries	9,270.78
Timber and stone entries	545,253.98
Mineral-land entries	97,657.90
Desert-land entries (original)	929,230.23
Excesses on homestead and other entries	23,256.89
Coal-land entries	12,575.46
Town sites	5,611.73
Town lots	5.27
Additional payments	155.27
Cash substitution	120
Act March 3, 1887, adjustment of railroad land grants and forfeiture of lands	9,638.60
Act July 5, 1884, providing for disposal of abandoned military reservations	11.15
Act September 29, 1890, forfeiting certain railroad grants	160
Act August 23, 1894, abandoned military reservations	1,844.47
Act January 18, 1897, Greer County, Okla., lands	4,451.98
Act June 6, 1900 (31 Stat., 672), to ratify an agreement with Indians of Fort Hall Reservation	17,539.91
Act June 7, 1900 (31 Stat., 1617), relief of John C. Smith	135.95
Act January 14, 1901 (31 Stat., 729), for relief of occupants of lands included in the Algodones Grant, Arizona	80
Act March 3, 1901 (31 Stat., 1085), homesteader's right to purchase on abandoned military reservation	647.02
Total	1,757,592.63

MISCELLANEOUS.

	Acres.	
Homestead entries (original)	14,033,245.78	
Entries with—		
Military-bounty land warrants	5,313.58	
Private land scrip	21,814.56	
Valentine scrip	160.00	
Wyandotte scrip	40.00	
Sioux half-breed scrip	2,313.29	
State selections	1,458,371.01	
Railroad selections	1,931,904.60	
Wagon-road selections	40,710.30	
Small holdings	930.40	
Donation act	159.98	
Indian allotments	31,190.30	
Swamp lands patented	68,744.97	
Swamp land indemnity lands patented	19,893.78	
		17,614,792.55
Total area of public-land entries and selections		19,372,385.18

INDIAN LANDS.

Cherokee	273.50
Klamath Indian reserve	440.00
Southern Ute	11,329.43

	Acres.	Acres.
Ute	55,142.72	
Osage trust and diminished reserve	37,415.43	
Kansas trust and diminished reserve	40.00	
Chippewa	5,080.42	
Sioux	639.80	
Flathead	480.00	
Ponca	12.19	
Omaha	3,841.18	
Colville Indian reserve	1,455.45	
		116,150.12
Grand total		19,488,535.30

RECAPITULATION.

Area sold for cash	1,737,592.63
Area miscellaneous entries	17,614,792.55
Area Indian lands	116,150.12
Aggregate	19,488,535.30

Showing an increase of 3,925,739 as compared with the aggregate of disposals for the fiscal year 1901.

The foregoing statement does not include the following entries, the areas of which have been previously reported in the original entries of the respective classes.

	Acres.
Final desert-land entries	210,742.24
Commuted homesteads, section 2301, Revised Statutes	953,525.13
Commuted homesteads under sundry other acts	152,325.63
Timber-culture entries under act March 3, 1891	2,195.56
Additional payments	1,260.40
Cash substitution	858.02
Act March 3, 1887	320.46
Act August 23, 1894	4,890.92
Final homestead entries	4,342,747.70
Final timber-culture entries	311,145.14
Military bounty land warrants	3,390.13
Private land scrip	571.28
Valentine scrip location	40.00
Commuted homesteads, Indian lands	52,090.04
Final desert-land entries, Indian lands	5,552.10
Total	6,041,654.75

The number of filings and fees thereon will be found in the following table:

	Number.	Fees.
Pre-emption	577	$1,666.00
Homestead	1,858	3,875.00
Coal	1,730	5,084.00
Reservoir	1,122	2,418.00
Town site	2	6.00
Mineral	2,201	22,010.00
Timber and stone applications	4,065	40,650.00
Valentine scrip	2	2.00
Wyandotte scrip	1	1.00
	11,558	75,712.00
Mineral adverse claims	349	3,490.00
Total	11,907	79,202.00

Miscellaneous fees as follows:

For reducing testimony to writing	$99,007.05
For cancellation fees	3,009.95
Total	181,219.00

CASH RECEIPTS.

The following is a statement of the cash receipts of the office from various sources during the fiscal year ended June 30, 1902:

Sales of land at private entry	$23,981.72
Sales of land at public auction	146,200.38
Sales of land by preemption entry	11,738.23
Sales of timber and stone land	1,363,166.41
Sales of mineral land	354,045.76
Sales of desert land (original)	232,308.01
For final desert land	210,758.99
For commuted homesteads (section 2301, Revised Statutes)	1,290,506.80
For commuted homesteads under special acts	202,107.89
Interest payments on commuted homesteads	7,279.64
For excesses on homesteads and other entries	32,980.99
For timber-culture entries commuted under act March 3, 1891	2,744.50
For sales of coal land	174,683.30
For supplemental payments	3,446.16
Under act March 3, 1887	14,466.85
Sales of town sites	7,460.35
Sales of town lots	837.70
Sales of abandoned military reservations under acts July 5, 1884, and August 23, 1894	19,365.76
For competitive bids	$114.00
Sales of land under special acts	39,375.03
Cash substitution	1,700.00
Total	4,139,268.47

FEES AND COMMISSIONS.

For homestead entries (original and final)	$1,502,018.22	
For timber-culture entries (final)	8,116.00	
For entries with—		
Military bounty land warrants	208.00	
Valentine scrip	5.00	
Wyandotte scrip	1.00	
For commuted homesteads, Indian ceded lands	4,751.96	
For State selections	19,708.00	
For railroad selections	24,270.00	
For wagon-road selections	518.00	
For lands entered under the donation act	5.00	
For preemption, coal, reservoir, and other filings	75,712.00	
For mineral adverse claims	3,490.00	
For cancellation notices	3,009.95	
For reducing testimony to writing	99,007.05	
		$1,740,820.18

Total receipts from disposal of public land	5,880,088.65
Total receipts from disposal of Indian lands	288,666.68
Total receipts from depredations on public land	41,415.97
Total receipts from sales of timber under acts March 3, 1891, and June 4, 1897	27,478.70
Total receipts from sales of Government property (old office furniture)	1,014.45
Total receipts for furnishing copies of records and plats	23,262.73
Grand total	6,261,927.18

The total cash receipts for the fiscal year 1901 were $4,972,160.79, showing an increase in receipts for the year ended June 30, 1902, of $1,289,766.39.

The total expenses of district land offices for salaries and commissions of registers and receivers, incidental expenses, and expenses of depositing public moneys during the fiscal year ended June 30, 1902, were $818,498.60, an increase of $44,880.61, as compared with the fiscal year 1901.

Number and class of final and original entries and selections made during the fiscal year compared with the year

Class of entry.	Number of entries.	Number of acres.	Cash receipts. Sales.	Cash receipts. Fees and commissions.
FINAL ENTRIES.				
Private	233	19,105.13	$23,981.72	
Public auction	1,845	80,840.91	146,200.38	
Preemption	66	9,270.78	11,738.23	
Timber and stone	4,022	545,253.98	1,363,166.41	
Mineral	2,023	97,657.90	351,045.76	
Desert land	1,334	210,742.24	210,758.99	
Commuted homesteads (sec. 2301, Rev. Stat.)	6,907	953,525.13	1,290,506.80	
Timber-culture entries commuted under act Mar. 3, 1891	14	2,195.56	2,744.50	
Excesses on homestead and other entries	5,571	23,256.89	32,980.99	
Coal lands	88	12,575.46	174,683.30	
Town sites	28	5,611.73	7,460.35	
Supplemental payments	19	1,415.67	3,446.16	
Abandoned military reservations, acts July 5, 1884, and August 23, 1894	107	6,746.54	19,365.76	
Competitive bids	1		114.00	
Town lots	28	5.27	837.70	
Cash substitution	10	978.02	1,700.00	
Commuted homesteads under special acts	1,082	152,325.63	202,107.89	
Cash for final homesteads				
Interest payments			7,279.64	
Under sundry acts	225	32,973.92	53,841.88	
Homestead	31,627	4,342,747.70		$137,020.42
Timber culture	2,029	311,145.14		8,116.00
Military bounty land warrants	69	8,703.71		208.00
Scrip locations under sundry acts	244	24,939.13		6.00
Indian allotments	223	31,180.30		
Small holdings	6	960.40		
Commissions on final and commuted homesteads				4,751.96
Swamp land and swamp indemnity land		22,207.07		
Land entered under donation act	1	159.98		5.00
	57,802	6,896,504.19 (57,642.14)	3,906,960.46	150,107.38
Indian lands	1,826	116,150.12	288,666.68	
Total	59,628	7,070,296.45	4,195,627.14	150,107.38
ORIGINAL ENTRIES.				
Desert land	5,480	929,230.23	232,308.01	
Homestead	98,829	14,033,245.78		1,364,997.80
Timber culture				
Total	104,309	14,962,476.01	232,308.01	1,364,997.80
RAILROAD, STATE, AND WAGON-ROAD SELECTIONS.				
Railroad	12,135	1,931,904.60		24,270.00
State—under the several acts	9,839	1,458,371.01		19,708.00
Wagon road	259	40,710.30		518.00
Total	22,233	3,430,985.91		44,496.00
FILING AND MISCELLANEOUS FEES.				
Filing fees and mineral adverse claims	11,907			79,202.00
Fees for reducing testimony to writing, etc				102,017.00
Total	11,907			181,219.00
RECAPITULATION BY TOTALS.				
Final entries	59,628	7,070,296.45	4,195,627.14	150,107.38
Original entries	104,309	14,962,476.01	232,308.01	1,364,997.80
Railroad, State, and wagon road selections	22,233	3,430,985.91		44,496.00
Filing and miscellaneous fees	11,907			181,219.00
Total	198,077	25,463,758.37	4,427,935.15	1,740,820.18
Deduct totals of decrease				
Net total of increase				

Entries originated and completed within the year embrace 1,028,641.70 acres; entries originating 6,041,654.75 acres; total acreage of final entries 7,070,296.45; net decrease in number of final entries, of area, 1,778,818.40 acres.

ended June 30, 1902; also the amount of cash for same, and increase or decrease, as ended June 30, 1901.

Increase as compared with 1901.				Decrease as compared with 1901.			
Number of entries.	Number of acres.	Cash sales.	Fees and commissions.	Number of entries.	Number of acres.	Cash sales.	Fees and commissions.
.....	700.49	.....	.....	32	.....	$79.79	.....
367	15,242.97	$53,337.03	.....	.....	.....	.....	.....
.....	.....	.....	.....	15	2,795.04	3,758.09	.....
991	148,808.37	371,021.48	.....	.....	.....	.....	.....
132	30,621.47	82,724.29	.....	.....	.....	.....	.....
423	58,581.90	57,939.00	.....	.....	.....	.....	.....
2,369	324,522.81	469,724.64	.....	.....	.....	.....	.....
2	546.55	683.24	.....	.....	.....	.....	.....
332	3,128.29	5,022.52	.....	.....	.....	.....	.....
4	1,619.55	.....	.....	.....	.....	33,249.70	.....
22	5,273.60	6,658.54	.....	.....	.....	.....	.....
14	1,334.87	3,324.62	.....	.....	.....	.....	.....
93	5,545.32	16,782.33	.....	.....	.....	.....	.....
1	.....	.....	.....	.....	.....	50.00	.....
3	1.20	100.70	.....	.....	.....	.....	.....
9	818.10	1,500.10	.....	.....	.....	.....	.....
380	56,098.93	51,245.08	.....	.....	.....	.....	.....
.....	.....	.....	.....	4	177.88	653.19	.....
.....	.....	3,713.47	.....	.....	.....	.....	.....
70	16,661.81	26,187.58	.....	.....	.....	.....	.....
.....	.....	.....	.....	5,941	898,373.06	.....	$26,767.89
.....	.....	.....	.....	562	84,343.70	.....	2,248.00
36	4,083.40	.....	$92.00	.....	.....	.....	.....
210	20,398.34	.....	.....	.....	.....	.....	5.00
153	20,381.93	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	34	42.75	.....	.....
.....	.....	.....	4,412.32	.....	.....	.....	.....
.....	.....	.....	.....	.....	196,996.62	.....	.....
.....	21.33	.....	.....	.....	.....	.....	.....
5,591	714,361.23	1,149,764.42	4,504.32	6,588	1,182,729.05	37,790.77	29,020.89
606	39,122.00	.....	.....	.....	.....	296,994.59	.....
6,197	753,483.23	1,149,764.42	4,504.32	6,588	1,182,729.05	334,785.36	29,020.89
1,523	242,847.67	60,751.96	.....	.....	.....	.....	.....
30,181	4,535,970.73	.....	420,785.97	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
31,704	4,778,818.40	60,751.96	420,785.97	.....	.....	.....	.....
.....	.....	.....	.....	7,548	901,425.08	.....	15,096.00
1,119	25,908.73	.....	2,264.00	.....	.....	.....	.....
.....	.....	.....	.....	705	112,960.84	.....	1,410.00
1,119	25,908.73	.....	2,264.00	8,253	1,014,385.92	.....	16,506.00
1,563	.....	.....	11,356.00	.....	.....	.....	.....
.....	.....	.....	6,542.49	.....	.....	.....	.....
1,563	.....	.....	17,898.49	.....	.....	.....	.....
6,197	753,483.23	1,149,764.42	4,504.32	6,588	1,182,729.05	334,785.36	29,020.89
31,704	4,778,818.40	60,751.96	420,785.97	.....	.....	.....	.....
1,119	25,908.73	.....	2,264.00	8,253	1,014,385.92	.....	16,506.00
1,563	.....	.....	17,898.49	.....	.....	.....	.....
40,583	5,558,210.36	1,210,516.38	445,452.78	14,841	2,197,114.97	334,785.36	45,526.89
14,841	2,197,114.97	334,785.36	45,526.89	.....	.....	.....	.....
25,742	3,361,095.39	875,731.02	399,925.89	.....	.....	.....	.....

in former years and heretofore so reported, but completed during the fiscal year 1902, embrace 391; decrease in area of final entries, 429,245.82 acres; net increase of original entries, 31,704; increase

ISSUE OF PATENTS FOR LANDS DISPOSED OF.

AGRICULTURAL PATENTS ISSUED.

Patents of the class denominated agricultural were issued during the fiscal year ended June 30, 1902, to the number of 41,191, containing approximately 6,590,560 acres, made up of the following, viz:

Cash patents	13,608
Homestead patents	25,081
Timber-culture patents	1,875
Forest-reserve patents	387
Military bounty land patents	61
Coal patents	51
Agricultural college scrip patents	9
Sioux half-breed scrip patents	15
Supreme Court scrip patents	7
Red Lake and Pembina scrip patents	2
Choctaw scrip patents	1
Surveyor-General's scrip patents	91
Seton scrip patents	1
Metoyer scrip patents	1
Algodones scrip patents	1
Total	41,191

The above statement shows a decrease in the number of patents of this class issued during the last fiscal year of 1,046, as compared with the fiscal year 1901, and in the approximate acreage a decrease of 167,360, although in the whole number of patents of all classes issued, and in the number of acres, a large increase appears, as hereinbefore stated.

MINERAL PATENTS.

Of mineral and mill-site patents, 1,553 were issued, as against 1,388 for the fiscal year 1901, an increase of 165. Of coal patents, 108 were issued, as against 104 for the preceding year, and including an area of 12,799.10 acres, as against an area of 12,060.87 acres, an increase of 4 patents and 738.23 acres.

In the following table are shown the States and Territories in which mineral and mill-site and coal patents were issued:

States and Territories.	Coal patents.	Area.	Mineral and mill-site patents.	Mineral and mill-site claims.	Mineral area.
		Acres.			*Acres.*
Alabama	1	79.82			
Alaska			5	17	402.292
Arizona			54	158	2,656.011
Arkansas			68	75	7,387.840
California			80	147	6,793.709
Colorado	75	9,317.65	737	1,520	17,093.735
Idaho			79	142	3,421.706
Montana	1	120.09	171	278	5,559.771
Nevada			25	41	533.232
New Mexico	7	754.52	18	34	552.105
North Dakota	5	494.00			
Oregon			14	31	650.265
South Dakota			79	341	3,987.197
Utah	2	80.22	188	473	7,343.781
Washington	3	400.65	23	36	542.460
Wyoming	14	1,552.24	12	38	725.301
Total	108	12,799.10	1,553	3,331	57,649.405

As shown in this table the 1,553 mineral and mill-site patents issued embraced 3,331 mineral and mill-site claims. This is an increase over the previous year of 165 patents, 559 claims, and an area of 6,796.94 acres. This increased acreage in mineral lands patented comes principally from Alaska, California, Colorado, Idaho, Montana, South Dakota, and Utah—Utah alone showing an increase of 4,618.69 acres. There appears a falling off in Arizona, Arkansas, Nevada, New Mexico, Oregon, Washington, and Wyoming.

The table also shows an increase over the previous year of 738.23 acres coal lands patented. Colorado and North Dakota contributed this total increase, and more, as the other States and Territories have not equaled their number for the previous year.

RAILROAD AND WAGON-ROAD LANDS PATENTED.

During the fiscal year ended June 30, 1902, lands have been certified or patented on account of railroad and wagon-road grants as follows, viz:

Name of road.	Where located.	Number of acres.
RAILROADS.		
State grants:		
St. Louis, Iron Mountain and Southern	Arkansas	1,174.03
Florida Central and Peninsula	Florida	79.58
Cedar Rapids and Missouri River	Iowa	525.86
Chicago, Milwaukee and St. Paul	do	486.56
Chicago, Rock Island and Pacific	do	40.00
Des Moines Valley	do	80.00
Missouri, Kansas and Texas	Kansas	40.00
Grand Rapids and Indiana	Michigan	1.66
Vicksburg and Meridian	Mississippi	80.02
Total of State grants		2,507.71
CORPORATIONS.		
Union Pacific (from a point near Omaha, Nebr., to a point near Ogden, in Utah).		1,655,586.30
Central Pacific		882,796.31
Central Pacific, successor by consolidation with Western Pacific		4,434.21
Central Branch Union Pacific		211.41
Union Pacific (Kansas division)		449,690.93
Union Pacific, successor to the Denver Pacific Rwy. Co		103,806.25
Sioux City and Pacific (now Missouri Valley Land Co.)		445.49
Northern Pacific		1,518,007.91
Oregon Branch of the Central Pacific (California and Oregon)		32,691.89
Oregon and California		64,800.00
Atlantic and Pacific (now Santa Fe Pacific)		116,580.75
Southern Pacific		15,184.13
Branch line of the Southern Pacific		4,592.17
New Orleans Pacific (formerly New Orleans, Baton Rouge and Vicksburg)		17.95
Total of corporations		4,848,845.70
WAGON ROADS.		
Willamette Valley and Cascade Mountain		1,837.05
Dalles Military		154,701.20
California and Oregon Land Co. (successor to Oregon Central Military Wagon Road)		240.00
Total of wagon roads		156,778.25
RECAPITULATION.		
Total to State grants		2,507.71
Total to corporations		4,848,845.70
Total to wagon roads		156,778.25
Grand total		5,008,131.66

As against an area of railroad and wagon road lands patented the preceding year of 2,636,351.73 acres, this statement shows an increase

of 2,371,779.93 acres, and an increase over the year 1900 (when 1,339,374.20 acres were patented) of 3,668,757.46 acres.

SWAMP-LAND PATENTS.

The following table shows the acreage of swamp and overflowed lands and swamp-land indemnity lands patented during the fiscal year ended June 30, 1902; also the acreage reported to this office as claims of the several States to which the swamp-land grants and the indemnity laws have been extended, and the acreage approved by the Secretary of the Interior during the same period. There is also added the total acreage certified under the grant of March 2, 1849, and patented under the grant of September 28, 1850, and the indemnity laws from the date of the passage of the earliest of the grants to June 30, 1902.

Swamp lands and swamp-land indemnity lands selected, approved, and patented during the fiscal year ended June 30, 1902; also the total number of acres patented since the dates of the grants.

State.	Swamp lands.			Swamp-land indemnity lands.			Total patented since dates of grants.
	Selected.	Approved.	Patented.	Selected.	Approved.	Patented.	
	Acres.	*Acres.*	*Acres.*	*Acres.*	*Acres.*	*Acres.*	*Acres.*
Alabama			91.93				437,147.28
Arkansas		40.00	280.00				7,683,160.17
California	5,049.37	7,593.68	11,677.26				1,881,581.90
Florida	4,966.99	10,819.32	9,701.35			19,053.78	17,191,553.65
Illinois							1,459,139.83
Indiana							1,258,990.93
Iowa		677.05	826.97				1,191,287.98
Louisiana (act of 1849)							8,733,038.57
Louisiana (act of 1850)	18,140.39	28,146.73	24,706.49				424,686.96
Michigan						40.00	5,678,516.64
Minnesota	130,250.52	26,223.49	18,583.56				3,892,095.00
Mississippi		3,210.22	2,052.91				3,324,356.38
Missouri						800.00	3,425,273.97
Ohio							26,206.95
Oregon		294.12	529.39				241,606.29
Wisconsin		200.00	295.11				3,355,710.33
Total	158,407.27	77,204.61	68,744.97			19,893.78	60,204,352.83

It will be seen from the above table that 68,744.97 acres of swamp land in place, and 19,893.78 acres of arable land, located with swamp-land indemnity certificates, making a total of 88,638.75 acres, were patented under the swamp-land laws during the fiscal year. The patents issued under these laws in the previous fiscal year amounted to 215,963.86 acres of swamp lands in place, and 3,239.83 acres of swamp-land indemnity lands, making a total of 219,203.69 acres. Thus there were patented under the swamp-land laws during the last fiscal year 130,564.94 acres less than in the previous fiscal year. The decrease was occasioned by the general reduction of the claims under the swamp-land grant, and the partial suspension of the work of adjudicating the claims of the States which elected to adjust their claims on the evidence of the field notes of survey, pending the consideration of the question as to whether oral evidence may be received to supplement the field notes and plats of survey in finally determining the character of lands claimed to have been swamp lands at the dates of the grants.

INDIAN AND MISCELLANEOUS PATENTS.

The following statement shows the area of lands embraced in Indian patents and patents for private land claims issued during the fiscal year ended June 30, 1902, by States and Territories, viz:

State or Territory.	Acres.	State or Territory.	Acres.
Alabama	16,275.08	New Mexico	268,769.38
Idaho	6,298.27	Oklahoma	599,841.21
Indiana	160.84	South Dakota	845,529.95
Louisiana	15,552.68		
Minnesota	155.85	Total	1,753,591.76
Nebraska	1,008.05		

This is an increase in area, as compared with the previous fiscal year, of 1,305,055.36 acres, the area patented during said year having been 448,536.40 acres.

CERTIFICATION OF LANDS GRANTED FOR EDUCATIONAL AND OTHER PURPOSES.

Lists of lands selected by the several States and Territories and approved by the Secretary of the Interior were duly certified during the fiscal year ended June 30, 1902, to the amount of 1,003,793.09 acres.

The following is a table of the lists certified:

State or Territory.	Land district.	Date of approval.	No. of list.	Grant.		Area in acres.
				Authority of law.	Purpose for which granted.	
California	San Francisco	Jan. 18, 1902	67	Sec. 7, act Mar. 3, 1853.	School-land indemnity.	12,520.07
Do	Shasta	May 3, 1902	11	do	do	18,088.09
Do	Independence	Jan. 2, 1902	9	do	do	6,689.29
Do	Visalia	June 20, 1901	13	do	do	6,013.60
Colorado	Pueblo	Jan. 8, 1902	15	Sec. 7, act Mar. 3, 1875.	do	11,711.89
Do	Glenwood Springs	June 14, 1902	4	do	do	25,521.26
Do	do	do	5	do	do	24,832.48
Florida	Gainesville	July 5, 1901	25	Sec. 1, act Mar. 3, 1845.	do	17,197.66
Idaho	Boise	Jan. 10, 1902	3	Sec. 11, act June 3, 1890.	University	2,966.80
Do	do	do	6	do	Penitentiary	240
Do	Lewiston	Mar. 27, 1902	7	do	do	1,240
Do	do	Mar. 29, 1902	8	do	do	241.37
Do	Boise	Apr. 28, 1902	9	do	do	187.27
Do	do	Jan. 10, 1902	7	Sec. 6, act June 3, 1390.	Public buildings	4,293.71
Do	Blackfoot and Cœur d'Alene.	Mar. 29, 1902	8	do	do	2,040
Do	Boise	Jan. 10, 1902	10	Sec. 11, act June 3, 1890.	Normal schools	5,782.83
Do	Lewiston	Mar. 27, 1902	11	do	do	2,763.72
Do	Blackfoot	May 21, 1902	12	do	do	4,957.14
Do	Lewiston	Jan. 16, 1902	9	do	State charitable, etc., institutions.	2,962.01
Do	Boise	Apr. 23, 1902	10	do	do	4,608.99
Do	Blackfoot	Feb. 17, 1902	9	Sec. 10, act June 3, 1890.	Agricultural college	3,360
Do	Boise	Apr. 23, 1902	10	do	do	440.24
Do	Blackfoot	Mar. 31, 1902	11	Sec. 11, act June 3, 1899.	Insane asylum	80
Do	Boise	Apr. 23, 1902	9	do	Scientific school	19,049.07
Do	Coeur d'Alene	do	11	do	do	6,396.44
Do	Blackfoot	Apr. 24, 1902	10	do	do	9,236.60
Louisiana	New Orleans	Dec. 9, 1901	27	Act May 20, 1826	School-land indemnity.	638.00

State or Territory.	Land district.	Date of approval.	No. of list.	Grant.		Area in acres.
				Authority of law.	Purpose for which granted.	
Montana	Helena	Dec. 30, 1901	10	Sec. 17, act Feb. 22, 1889.	School of mines	6,868.95
Do	Kalispell	do	12	do	Public buildings	986.50
Do	Miles City	Feb. 10, 1902	13	do	do	640.00
Do	Missoula	Feb. 17, 1902	2	Sec. 12, act Feb. 22, 1889.	do	1,236.57
Do	do	June 9, 1902	3	do	do	164.49
Do	do	May 24, 1902	11	Sec. 17, act Feb. 22, 1889.	do	255.83
Do	Bozeman	Dec. 30, 1901	6	do	Agricultural college	5,177.93
Do	Kalispell	Jan. 20, 1902	7	do	do	80.00
Do	Helena	Jan. 14, 1902	11	do	Normal schools	3,360.00
Do	Missoula	Feb. 12, 1902	12	do	do	200.00
Do	Helena	Feb. 10, 1902	8	do	Reform school	640.00
Do	Bozeman	June 9, 1902	9	do	do	754.57
Do	Helena	Feb. 17, 1902	9	do	Deaf and dumb asylum.	2,280.00
Do	Lewistown	July 26, 1901	3	Sec. 10, act Feb. 22, 1889.	School-land indemnity.	3,305.70
Do	do	Apr. 21, 1902	4	do	do	17,661.52
Do	Miles City	Apr. 11, 1902	2	do	do	1,970.34
Nebraska	O'Neill	Feb. 18, 1902	4	Act Apr. 19, 1864	do	787.68
Nevada	Carson City	Jan. 8, 1902	18	Sec. 8, act Sept. 4, 1841.	Internal improvements.	1,275.26
New Mexico	Santa Fe	July 5, 1901	3	Sec. 3, act June 21, 1898.	Agricultural college	38,983.92
Do	Las Cruces	Jan. 18, 1902	4	do	do	18,254.04
Do	Santa Fe	July 5, 1901	4	Sec. 6, act June 21, 1898.	Insane asylum	12,948.94
Do	Las Cruces	Jan. 18, 1902	5	do	do	11,168.08
Do	Santa Fe	Sept. 20, 1901	4	do	Institute for the blind.	13,191.77
Do	do	do	4	do	Reform school	12,397.56
Do	Las Cruces	Jan. 18, 1902	5	do	do	10,697.84
Do	Santa Fe	Sept. 20, 1901	4	do	School of mines	12,595.85
Do	Las Cruces	Jan. 18, 1902	5	do	do	10,985.00
Do	Santa Fe	Sept. 20, 1901	4	do	Penitentiary	12,716.31
Do	Las Cruces	Jan. 18, 1902	5	do	do	10,379.91
Do	Santa Fe	Sept. 20, 1901	2	Sec. 3, act June 21, 1898.	University	52,206.58
Do	do	do	4	Sec. 6, act June 21, 1898.	Deaf and dumb asylum.	10,544.12
Do	Las Cruces	Feb. 17, 1902	5	do	do	10,918.08
Do	Santa Fe	Jan. 16, 1902	4	do	Miners' hospital	10,849.86
Do	Las Cruces	Jan. 18, 1902	4	do	Military institute	10,376.70
Do	do	do	4	do	Normal school	21,302.72
Do	do	Mar. 24, 1902	5	do	do	22,533.73
Do	do	Feb. 8, 1902	2	do	Reservoirs	49,845.94
Oklahoma	Comanche, Kiowa, and Apachelands.	July 6, 1901	1	Act June 6, 1900	School-land indemnity.	37,372.72
Do	Wichita lands.	do	1	Act Mar. 2, 1895	do	2,921.16
Do	Comanche, Kiowa, and Apachelands.	do	1	Act June 6, 1900	Indemnity for sections 13 and 33.	28,499.98
Do	do	do	2	do	do	31,360.83
Do	Wichita lands	do	1	Act Mar. 2, 1895	do	6,277.75
Do	Kingfisher	Nov. 19, 1901	10	Sec. 18, act May 2, 1890.	School-land indemnity.	3,997.26
South Dakota	Pierre	Apr. 2, 1902	8	Sec. 10, act Feb. 22, 1889.	do	17,735.76
Do	Watertown	Dec. 30, 1901	7	Sec. 17, act Feb. 22, 1889.	Agricultural college	3,924.71
Do	Huron	Apr. 17, 1902	8	do	do	3,816.91
Do	Aberdeen	May 24, 1902	9	do	do	501.00
Utah	Salt Lake City	Nov. 19, 1901	4	Sec. 12, act July 16, 1894.	Reform school	16,483.74
Do	do	May 27, 1902	5	do	do	8,467.90
Do	do	Nov. 19, 1901	8	do	Reservoirs	28,011.49
Do	do	Apr. 28, 1902	9	do	do	23,262.92
Do	do	Nov. 19, 1901	5	do	Deaf and dumb asylum.	7,319.49
Do	do	do	4	Sec. 8, act July 16, 1894.	University	14,060.86
Do	do	Apr. 28, 1902	5	do	do	13,817.60
Do	do	Dec. 23, 1901	6	do	Agricultural college	17,181.76
Do	do	do	5	Sec. 12, act July 16, 1894.	Insane asylum	14,995.95
Do	do	Feb. 28, 1902	3	do	Normal school	17,676.15
Do	do	Apr. 17, 1902	4	Sec. 7, act July 16, 1894.	Public buildings	18,373.04
Do	do	June 27, 1902	6	Sec. 12, act July 16, 1894.	School of mines	12,151.64

State or Territory.	Land district.	Date of approval.	No. of list.	Grant.		Area in acres.
				Authority of law.	Purpose for which granted.	
Washington	Vancouver	Jan. 3, 1901	13	Sec. 17, act Feb. 22, 1889.	Scientific school	3,677.68
Do	Olympia	do	14	do	do	627.95
Do	North Yakima	do	15	do	do	8,496.63
Do	Seattle	do	16	do	do	2,854.08
Do	Olympia	Nov. 19, 1900	17	do	Charitable, educational, etc., institutions.	923.27
Do	Seattle	Dec. 5, 1901	9	Sec. 12, act Feb. 22, 1889.	Public buildings	200.00
Do	Vancouver	Dec. 9, 1901	17	Sec. 17, act Feb. 22, 1889.	do	2,875.83
Do	Waterville	do	12	do	Normal school	2,380.87
Do	North Yakima	Feb. 12, 1902	13	do	do	4,454.03
Do	Spokane	Jan. 23, 1902	13	do	Agricultural college	293.73
Do	Seattle	Feb. 8, 1902	14	do	do	4,466.31
Do	Olympia	Feb. 11, 1902	15	do	do	1,627.99
Wyoming	Buffalo	Dec. 30, 1901	14	Sec. 11, act July 10, 1890.	do	1,756.00
Do	Evanston	May 24, 1902	15	do	do	4,639.68
Do	Cheyenne	Jan. 16, 1902	6	do	Insane asylum	1,402.81
Do	Buffalo	May 21, 1902	7	do	do	2,440.50
Do	do	July 26, 1901	2	Sec. 4, act July 10, 1890.	School-land indemnity.	14,671.34
Do	Douglas	July 18, 1901	3	do	do	9,621.56
Do	Sundance	Dec. 9, 1901	2	do	do	18,071.59
Total						1,003,793.09

Of these selections, lists 13, 14, 15, and 16 for scientific schools, and list 17 for charitable and educational institutions in the State of Washington, and list 13 of indemnity school land in the Visalia district, California, were approved during the previous fiscal year, but were not reported in the last report of this office.

The foregoing statement shows that with these amounts 1,003,793.09 acres were approved and certified during the fiscal year. The aggregate of lands of the same class certified during the fiscal year 1901 was 1,243,519.92 acres, showing a decrease during the last fiscal year of 239,726.83 acres, which is due to the fact that a portion of the force of the division having charge of the adjudication of State grants was necessarily detailed to other and more pressing work.

In addition to this, selections aggregating 44,539.72 acres were canceled during the year.

Recapitulation of areas embraced in patents as stated in the foregoing.

Patents.	1901.	1902.	Increase.	Decrease.
	Acres.	*Acres.*	*Acres.*	*Acres.*
Agricultural	6,757,920	6,590,360		167,360
Coal	12,060.07	12,799.10	738.23	
Mineral and millsite	50,852.45	57,649.40	6,796.94	
Railroad	2,470,804.55	4,851,353.41	2,380,848.86	
Wagon road	165,547.18	156,778.25		8,768.93
Swamp	215,963.86	68,744.97		147,218.89
Swamp indemnity	3,239.83	19,893.78	16,653.95	
Indian and miscellaneous	448,536.40	1,753,591.76	1,305,055.36	
School selections	1,243,519.92	1,003,793.09		239,726.83
Total	11,368,445.06	14,514,963.76	3,710,093.34	563,074.65

Net increase, 3,147,018.69 acres.

BOUNTY-LAND BUSINESS.

The following is a statement of the number of acres represented by military bounty-land warrants located in the several land States and

Territories for the year ended June 30, 1902, or not heretofore reported, which warrants were issued under the acts of 1847, 1850, 1852, and 1855. The aggregate number of acres is computed at the rate of $1.25 per acre. It does not show the exact area of the lands located with the warrants.

	Acres.		Acres.
Arkansas	3,600	Minnesota	2,080
Colorado	120	North Dakota	1,920
California	1,520	Oregon	480
Louisiana	680		
Montana	160	Total	10,560

Summary of warrants.

Denomination of warrants.	40 acres.	80 acres.	120 acres.	160 acres.	Total.
Act of—					
1847	2			2	400
1850	4	5		2	880
1852					
1855		9	14	43	9,280
Total	6	14	14	47	10,560

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OPENING OF THE WICHITA AND THE KIOWA, COMANCHE, AND APACHE INDIAN RESERVATIONS IN OKLAHOMA TERRITORY.

During the last fiscal year the lands embraced in these reservations were thrown open to settlement and entry, by special direction of the Secretary of the Interior, under the agreements respectively ratified by the acts of March 2, 1895, and June 6, 1900, as set forth in the report of the assistant commissioner to the Secretary dated October 9, 1901.

As the method adopted for this opening was fully set forth in the annual report of the Secretary of the Interior for 1901, and as the course adopted for disposing of these lands was eminently successful (practically all the public lands in said reservations having passed quietly into the hands of homesteaders), it is deemed that the results fully vindicated the principles on which the opening was conducted, and further details are not considered necessary in this report.

PUBLIC SURVEYS.

The areas covered by surveys accepted by this office during the fiscal year ended June 30, 1902, are as follows:

State or Territory.	Acres.	State or Territory.	Acres.
Alaska	1,133	New Mexico	164,164
Arizona	322,866	North Dakota	353,456
California	56,345	Oregon	794,104
Colorado	258,388	South Dakota	1,401,141
Florida	3,049	Utah	798,200
Idaho	1,335,495	Washington	307,316
Minnesota	524,654	Wyoming	395,318
Montana	1,890,353		
Nevada	660,996	Total	9,267,978

In addition to the areas named in the foregoing table resurveys aggregating 91,212 acres in Cheyenne and Cherry counties, Nebr., were accepted during the fiscal year, not counted in this statement for the reason that said resurveys do not increase the surveyed area of the public lands.

The aggregate area covered by the surveys accepted during the fiscal year 1900, was 7,567,282 acres, and for the fiscal year 1901, 8,810,837 acres.

By the act of Congress approved March 3, 1901 (31 Stats., 1159), making appropriations for sundry civil expenses of the Government for the fiscal year ending June 30, 1902, and for other purposes, there was appropriated "For surveys and resurveys of public lands" the sum of $325,000, of which amount the Commissioner of the General Land Office was authorized to expend so much as he might deem necessary for examinations in the field, etc.

The sum of $75,000 was set aside to cover the cost of field examinations; the sum of $10,000 was reserved for emergencies, and the remainder, $240,000, was apportioned among the several surveying districts. The apportionments made to the several districts were as follows:

Alaska	$5,000	North Dakota	$20,000
Arizona	12,000	Oregon	22,000
California	13,000	Utah	15,000
Colorado	6,000	Washington	30,000
Idaho	32,000	Wyoming	20,000
Minnesota	5,000	Examinations	75,000
Montana	42,000	Reserve fund	10,000
Nevada	10,000		
New Mexico	8,000	Total	325,000

Further apportionments were made from time to time to several surveying districts from the fund of $10,000 held in reserve, and practically the entire amount available was absorbed in contracts let and duly approved.

The annual surveying instructions for the fiscal year will be found in the appropriate place in this report.

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SUMMARY OF RECOMMENDATIONS.

1. Recommends an appropriation specifically for surveys in Alaska. Page 48.

2. Recommends legislation in reference to rights of way granted under existing laws. Page 57.

3. Renews recommendation of legislation to provide for compulsory attendance of witnesses in hearings before district land offices. Page 70.

4. Renews recommendation of a repeal of existing laws with regard to timber on the unreserved public lands, and the passage in their stead of a general law which will provide ample protection for the forests and at the same time furnish a means by which monopolies, settlers, miners, and others may secure a sufficient supply of timber for their legitimate needs. Page 75.

5. Recommends larger appropriation for an increased number of special agents for the prevention of depredations upon public timber and

protection of the public lands from unlawful entry or appropriation. Page 79.

6. Renews recommendation of a change in the law providing for an exchange of lands embraced in forest reserves held by private owners for public lands not in reservation, so as to secure an approximation in value of the lands relinquished with those selected in lieu thereof. Page 88.

7. Renews recommendation of legislation for the protection of game and fish within the limits of the various forest reserves. Page 115.

8. Renews recommendation for extending the boundaries of the Yellowstone National Park. Page 115.

9. Renews recommendation for the passage of a bill empowering the President to set apart as national parks tracts of public land which, from their scenic beauty, natural wonders or curiosities, ancient ruins or relics, or other objects of scientific or historic interest, or springs of medicinal or other properties, it is desirable to protect and utilize in the interest of the public. Page 115.

Respectfully submitted.

BINGER HERMANN, *Commissioner.*

Hon. E. A. HITCHCOCK,
Secretary of the Interior.

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REPORT OF THE COMMISSIONER OF INDIAN AFFAIRS.

OFFICE OF INDIAN AFFAIRS,
Washington, D. C., October 16, 1902.

SIR: The seventy-first Annual Report of the Office of Indian Affairs is respectfully submitted.

PRECEPT AND PRACTICE.

Cutting off Rations.—In previous reports some space was given to the discussion of the Indian's progress and the difficulties to be overcome on his way to civilization. It was pointed out that among the obstacles to his self-support the first and perhaps the principal one was the then prevailing ration system, which was justly condemned as encouraging idleness with its attendant vices and as foreign in its results to the very purpose for which it was designed. At the same time, while an evil, it was admitted to be a necessary evil, to be endured only while the Indian was learning the art of self-support, or at least put in a way where, by the exercise of ordinary industry, he could support himself. The continuance, however, of the practice of the indiscriminate issue of rations to all alike, without regard to their worldly condition, was earnestly opposed, and it was laid down as a correct rule of action that only the old and helpless should be supported, while the able-bodied, if not already self-supporting, should be given the opportunity to work and should then be required to take care of themselves.

Faith without works is dead. Realizing this the office set to work to show by its acts the sincerity of its belief.

And here it is proper to say that this change in the manner of dealing with the Indians was not a hasty conception on the part of the office. Indeed, it was not new at all. It has been the hope and desire of enlightened men for many years. But inasmuch as it has been the subject of some harsh criticism and severe condemnation, and as the Indian Office has been freely charged with ignorance and blunders, it is simply fair that the motives which governed it and the principles which actuated it should be known and understood in order that the public may form an intelligent judgment on the matters involved. For this purpose it is necessary to go over some familiar ground and give it a somewhat extended notice.

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EDUCATION.

The principal factor in the civilization of the Indian is the education of his children. To be most effective that education should be of a practical kind which will prepare them to assume the responsibilities of citizenship and to be able to earn their own living. The Government attempts to carry out this idea by a system of graded schools adapted to the varying conditions of the Indians.

Indian schools are divided into (1) nonreservation boarding schools, (2) reservation boarding schools, (3) day schools.

The first class, not being on the reservations, are usually located near the centers of civilization, and are, as a rule, large institutions. Reservation boarding schools are the home schools of the Indians, in which their children are collected from the reservations. Day schools are near the camps of the Indians and within easy reach of their homes. In a number of instances, where there are sufficient numbers of Indians living off the reservations without proper school facilities, a teacher has been furnished for the school, usually occupying a rented or donated building.

Various churches also have denominational schools in the Indian country whose works of education are valuable aids.

Contracts are also made at certain points with public schools for the coeducation of Indians and whites.

COST OF INDIAN SCHOOLS.

The expenditure for Indian schools for the fiscal year ended June 30, 1902, was $2,837,785, out of general and specific appropriations made therefor by Congress, to which must be added about $600,000 taken from treaty funds for the support of schools established under such treaties. This gives the total cost for this branch of the service for the year as $3,437,785, an amount apparently very large until the results of its expenditure are considered. Out of these moneys there were maintained 249 schools with an enrollment of 24,434 pupils, and in addition a number of pupils at Hampton and public schools, making in all 24,757. Taking the above figures, the average cost of Indian education per capita was $138.75.

In order that a comparison may be made between the cost of Indian schools and other schools, data have been secured concerning the expenses of maintaining reform schools and industrial institutions in the country. These were selected as subjects of comparison by reason

of the fact that they more nearly correspond in principal details with Indian schools than do the average public and private schools for white children. These data were collated from returns made to the Bureau of Education, and refer to the fiscal year 1899–1900, the latest which it has on the subject. An inspection of the original returns made by these schools and institutions indicates that the data are not full and complete, and evidently do not wholly cover the expenditures on their behalf. This is verified by returns from a few of them, which are full and complete, and show the per capita cost largely in excess of the average obtained from all such schools. It must also be taken into consideration that the data are for a fiscal year when the cost of living was less than for the time included in the Indian estimates. Even imperfect as the result of such data necessarily appears to be, the comparison is not unfavorable to the schools managed by the Indian Department. Reform schools and industrial institutions are usually located in thickly settled communities, while the conditions surrounding them, the character of the inmates, the produce raised, number of employees, all tend to reduce the cost of living; on the other hand, Indian schools are located, as a rule, in remote places in the West, far from regular lines of transportation, where the cost of living is excessive, and on account of the general conditions of the average reservation, the production of garden vegetables, etc., is expensive or scanty. There is also a manifest necessity for more employees, as the children are usually small, speaking a strange language, and must be taught the minute details of home life, which is a part of the home training of the white child.

The following data give the cost, etc., at reform schools and industrial institutions referred to:

TABLE No. 2.—*Statistics showing pupils, instructors, cost, etc., of reform schools and industrial institutions for the fiscal year 1899–1900, collated from returns to the Bureau of Education:*

Number of schools reported	80
Number of instructors	538
Number of pupils	23,901
Value of buildings and grounds	$17,504,444
Per capita cost	$732
Expenditures for buildings and repairs	$576,344
Per capita cost	$24
Salaries and other expenses, being cost of running schools	$3,254,690
Per capita cost	$136
Total expenditures for buildings, repairs, salaries, subsistence, etc	$3,831,034
Per capita cost	$160

For the purpose of comparison, the following table gives similar data relative to Indian schools for 1901–2:

TABLE No. 3.—*Cost per capita, number of pupils, employees, etc., at Indian schools for the fiscal year ended June 30, 1902.*

Number of schools	249
Number of employees	2,289
Number of pupils	24,757
Value of buildings (grounds excluded), about	$5,000,000
Per capita cost	$201
Expenditures for buildings and repairs, about	$600,000
Per capita cost	$24
Total expenditures for buildings, repairs, salaries, subsistence, etc	$3,437,785
Per capita cost	$138

It will thus be seen, from the above tables, that the cost per capita at reform schools, etc., was $160 per annum, while at the Indian schools it was $138 for the same time. If the per capita at Indian schools is based upon average attendance instead of enrollment, which basis is under all conditions unfair and inaccurate, the cost at Indian schools will be $165, only $5 per capita more than at white institutions, where conditions are so totally different. These figures clearly dispose of the argument that Indian schools are expensive luxuries to the people for the benefit of the large number of Indian pupils educated therein. While it is true that many who are thus favored by the Government do not appreciate the advantages, yet the same argument applies with equal force to the white institutions referred to and even to our public schools, colleges, and universities. Education per se does not make a successful man or woman, or else there would not be the great host of failures in the world, but all things being equal it enhances the value of natural talents and develops latent capabilities, which would remain dormant were it not for the systematic training received.

The unrivaled public-school system of the United States has its opponents, who hold the theory that the education of the children of its citizens is not a state but private function. To the credit of a great nation, such persons are in a small minority. Indian education has its opponents from the same class and for the same reasons, but going further, that no child values his education which has not cost him something. This may be true in some instances, but the great majority of the millions of American citizens who have been educated in the free schools of this country appreciate none the less the advantages given them by the State because they cost them nothing. It is the duty of the State to give all of its children a good common-school education; it is equally the duty of the General Government to give, for the same reasons, every Indian child the same opportunities, and even more, by reason of his history, his present condition, and its own protection, a chance to learn a useful trade, so that he may in time become a self-respecting, self-supporting citizen.

The amount spent by the Government in Indian wars can, of course, only be estimated. These wars in many instances were bloody and serious. Omitting those, with Great Britain 1812–1815, with Mexico 1846–1848, and the civil war 1861–1865, two-thirds of the total expense of the Army of the United States may be charged to the Indians directly or indirectly. Even during these wars there were, at the same time, many conflicts with the Indians not considered in the above estimates. The United States census, 1890, estimated the total expenses of the United States Army from March 4, 1789, to June 30, 1890, as $4,725,521,495. Deducting cost of wars above enumerated, $3,514,911,008, the remainder is $1,210,610,487, two-thirds of which it is estimated were expended for Indian wars and services incident thereto, namely, $807,073,658 (cost of fortifications, posts, and stations being deducted). To this should be added $28,201,632 paid during that time for pensions, and also about $10,000,000 which the United States Government reimbursed the several States for the cost of their individual wars with the Indians, making a great total of $845,275,290 spent by the Government from its foundation to 1890 in subduing, fighting, and controlling the Indians of the country. No account, however, can be made of the thousands of homes desolated by fire and the scalping knife, the destitution of widows and orphans, and the

retardation of the western course of empire. Eight hundred and forty-five millions of dollars expended to carry the sword and bayonet among these people, as against $240,000,000 for the education and care of their children, to prepare them for citizenship and respectable manhood and womanhood! There should be no cause for regret for the few millions given for a laudable purpose, when contrasted with the many millions for war and conquest.

* * * * * * *

ALLOTMENTS AND PATENTS.

The progress in allotment work since the last annual report is as follows:

ALLOTMENTS ON RESERVATIONS.

During the year patents have been issued and delivered to the following Indians:

Kiowa, Comanche, and Apache, in Oklahoma	2,957
Omaha, in Nebraska	19
Sioux, Lower Brulé Reservation, in South Dakota	1
Sioux, Rosebud Reservation, in South Dakota	3,104
Wichita and affiliated bands, in Oklahoma	956
Winnebago, in Nebraska	268

Allotments have been approved by this Office and the Department, as follows:

Chippewa of Lake Superior, on the Bad River Reservation, Wis.	352

Schedules of the following allotments have been received in this office, but have not been finally acted upon:

Sioux of the Cheyenne River Reservation, S. Dak	359
Sioux of the Rosebud Reservation, S. Dak	350

The only alloting agents now in the field engaged upon reservation work are William A. Winder (Rosebud), John H. Knight (Cheyenne River), and John K. Rankin (Crow). The condition of the work in the field is as follows:

Cheyenne River Reservation, S. Dak.—Special Allotting Agent John H. Knight reported August 25 that he had then made 860 allotments, being 345 for the year ending on that date.

Rosebud Reservation, S. Dak.—Special Allotting Agent Winder reported July 31, 1902, that the field work could probably be completed by the 30th of September, if those who refuse to take allotments are allowed to remain in their present status, and no changes in allotments are permitted. September 1 he reported that he had made 4,698 allotments, which would leave some 300 to be allotted.

Work in the field was suspended on the Cheyenne River and Rosebud reservations during the month of June, and a portion of May, owing to the failure of the appropriation.

Crow Reservation, Mont.—Special Allotting Agent John K. Rankin reported August 24 that he had then made 809 allotments.

Shoshoni Reservation, Wyo.—Work was suspended in 1900. The purpose is to plan a system of irrigation on that reservation before renewing the allotment work. When the irrigation plan shall have been made, and it is definitely known what lands can be irrigated, the allotments will be completed.

Exchange of Bad River allotments.—February 4, 1901, Agent Campbell forwarded a list of Indians on the Bad River Reservation, Wis., whose allotments had been burned over and the timber totally destroyed. They asked that they be permitted to relinquish those lands and select others in lieu thereof. In a report to the Department dated April 8, 1901, the office recommended that if the Indians were permitted to relinquish their allotments and select others in lieu thereof, they should be required to reimburse the tribal funds to the extent of sums previously received by them from the sale of timber. This was approved by the Department September 21.

September 28, Agent Campbell was instructed accordingly, and on November 30, 1901, he submitted a list of 35 allottees who desired to relinquish their lands and select others in lieu thereof, and also the patents which had theretofore been issued in their favor. These patents and the schedule of new allotments, together with the other papers in the case, were forwarded to the Department December 6, with recommendation that the schedule be laid before the President for approval, and that the relinquished patents be canceled of record.

February 10, 1902, the Department requested the President to approve the schedule, but said, referring to Department action of October 4, 1898, in a similar case:

> While I do not agree with the action taken by the then Acting Secretary in 1888, in similar cases, this matter has gone so far that I have the honor to request that the schedule of the new selections herewith submitted be approved, and that your authority for the cancellation of the relinquished patents be indorsed hereon, with the understanding that those who had received any payment from the timber cut on their old allotments should reimburse the tribal funds for the value thereof; and with the further understanding that this authority relates only to this case and that authority for changes in allotments for the reason that the timber thereon has been destroyed by fire will not hereafter be granted.

July 30, 1902, the Department advised this Office of the approval of the schedule by the President on February 24 last, and stated that the patents had been forwarded to the Commissioner of the General Land Office for cancellation. August 12, 1902, Agent Campbell was advised of this action.

NONRESERVATION ALLOTMENTS.

Special Allotting Agent William E. Casson has continued, during the past year, the work of surveying, investigating, and overhauling allotments to Indians under the fourth section of the general allotment act in the Redding and Susanville, Cal., land districts. The work in the Susanville district was not completed last fall before severe weather rendered it necessary to suspend it. The work, however, was continued with a diminished force of assistants during the winter months in the Redding district. Work was resumed in the Susanville district last spring, and is now almost completed. It will probably require several months to complete the investigation in the Redding district after Mr. Casson's return thereto from Susanville.

Quite a large number of allotments in the Susanville district have been reported by Mr. Casson for cancellation many on the ground that the allottees are mixed bloods descended from white fathers, and therefore not entitled to allotments under the fourth section, being citizens.

Most of the cancellations recommended, however, are those rendered necessary by the rule adopted by the Department about 1895 or

1896 to the effect that "lands more valuable for the timber than for agricultural or grazing purposes are not subject to allotment under the fourth section." Mr. Casson reported 129 such cases November 27, 1901, and it is presumed that still more will be reported.

In the opinion of this Office the cancellation of Indian allotments on this ground is unjust and an unfair discrimination against the Indian allottee, and the rule should be modified. The rule was adopted as a result of the numerous fraudulent applications for allotments in northern Wisconsin and Minnesota made for the sole purpose of procuring the timber; but the timber conditions in that locality differ very widely from those in other sections of the country, and the application of the rule generally works a great hardship upon the Indians. The timber on the allotments in the Susanville and Redding districts, for example, is, for the most part, scattered and of comparatively little value, yet of more value than the land itself which, as a rule, has only a few patches upon which gardens can be made, and is almost worthless except for grazing purposes. The Indians can not see why white men should be permitted to enter, under the homestead laws, these so-called timber lands which are denied the Indians as allotments. Mr. Casson deprecates in the strongest terms the necessity of canceling such allotments, stating that in most cases the lands are suitable as allotments and could be improved so as to make comfortable homes for the Indians, and that it is very difficult to find any more suitable vacant land that is not more valuable for the timber than for agricultural or grazing purposes.

Many allotments to full-blood Indians have also been reported by Mr. Casson for cancellation as a result of the decisions of the Department dated January 3, 1902, in the cases of Mrs. Pete, wife of Boston Pete, and of Ducey Turner, minor daughter of Charles Turner, all nonreservation Indians residing in the Susanville land district. Boston Pete and Charles Turner had entered lands under the Indian homestead laws some years ago, and the question was raised whether the wives and children of such Indian homesteaders, all full bloods, would be entitled to allotments under the fourth section. The Department held that these Indian homesteaders became citizens of the United States when they took homesteads, and that their wives and minor children followed their status as citizens, and were not therefore entitled to allotments under the fourth section.

This question was further considered by the Assistant Attorney-General for the Interior Department. In an opinion dated June 28, 1902, and approved by the Department, it is held in effect that an Indian woman living with a citizen of the United States in marriage relation, whether he be an Indian or not, is not entitled to an allotment under the fourth section. This opinion proceeds on the theory that persons who are citizens of the United States by virtue of the provisions contained in section 6 of the act of February 8, 1887 (24 Stats., p. 388), are not entitled to allotments under the fourth section.

The result of this ruling, it is believed, will be to work hardship on many families of industrious and progressive Indians.

In one of his reports, submitting several cases of allotments to the wives and children of Indian homesteaders, Mr. Casson makes the following comment:

> The homesteader is the best among the Indians, and it seems to me too bad that they can not hold lands for the wife and children under the allotment act. The

allottee who waits for an agent to come and allot him, and who gets land for his family, as a rule makes no use of it, and it really looks to the Indian homesteader that there is a premium on shiftlessness.

Special Allotting Agent George A. Keepers has been engaged during the past year in making allotments to nonreservation Indians along the Columbia River, in the Vancouver and Walla Walla land districts, in Washington, and in The Dalles land district in Oregon. August 1, 1902, he reported that he had made a total of 165 allotments to Indians in that locality. All the land so allotted was classified as grazing land, although each allotment embraced enough farming land for the individual use of the allottee. The Indians, he reports, are averse to removing any distance from their old locations for the purpose of securing allotments, hence it is difficult to secure desirable lands for them, especially as the country is being very rapidly settled up by whites.

They have taken an interest in having the lands desired by them properly surveyed and the correct corners established, but a large majority of them are very poor and subsist upon fish and roots gathered in the mountains, together with the little game which they are able to kill, and as they have nothing with which to improve their land, their future does not look very bright. Those who have the means to begin work are, however, showing a disposition to improve and cultivate their land and to better their condition.

On Rock Creek, in the State of Washington, Mr. Keepers states that there are a number of children of school age who should have educational facilities.

Mr. Keepers adds that he has proceeded with the work of making allotments very carefully and so as not to interfere with the valid rights of any white settlers. At the outset there was a disposition on the part of a few stockmen to trespass on the Indian lands, but they have been given to understand that the rights of the Indians would be protected, so that no further trouble from that source is anticipated.

With the exception of some applications which Special Allotting Agent Keepers assisted the Indians in making, but few applications by Indians for allotments under the 4th section have been transmitted to this office by the General Land Office during the past year. No trust patents for such allotments have been issued since my last annual report was submitted.

ALLOTMENTS RELINQUISHED WITHIN THE SIOUX CEDED TRACT.

Under section 13 of the Sioux act, approved March 2, 1889 (25 Stats., 888), the Indians residing within the Sioux ceded tract in South Dakota were allowed, upon certain conditions, to take allotments on the ceded lands. Many of the Indians availed themselves of this privilege. However, soon after they had been allotted by the special agent in the field, they began to relinquish their allotments to the United States and remove to the reservations to which they respectively belonged; and they have continued to execute relinquishments from time to time, until more than one-third of those who elected to take allotments on the ceded lands have relinquished them and moved upon the reservations. The number originally allotted on the ceded tract was 431, and the Department has accepted and approved 158 relinquishments up to the present time.

IRRIGATION.

The Indian appropriation act for the current fiscal year contains an appropriation of $150,000 for construction of ditches and reservoirs, purchase and use of irrigating tools and appliances, and purchase of water rights on Indian reservations, and authorizes the employment of not exceeding two superintendents of irrigation who shall be skilled irrigation engineers. The appropriation for the last fiscal year was $100,000, with a similar provision for the employment of engineers, and also for the employment of a clerk in this office at a salary of $1,000 per annum.

Two engineers are employed—George Butler, at large, and John B. Harper, on the Pueblo and Jicarilla reservations in New Mexico. Experience has demonstrated that the number of superintendents allowed is not sufficient to secure a judicious expenditure of the amount appropriated. Superintendent Butler was taken from general work and placed in charge of construction on the Klamath Reservation, but before he had completed that work the Department felt compelled to assign him to duty on the Navaho Reservation. The number of superintendents should be increased to five.

Some $5,000 of the appropriation for last year was expended on the Pueblo, Southern Ute, Uintah, Walker River, Pyramid Lake, Western Shoshoni, Yakima, Klamath, Mescalero, and Wind River reservations.

Superintendent Harper has estimated for the expenditure of some $85,000 on the Zuni Reservation, $50,000 to be expended the first year; $8,400 has been set aside for the Pueblo of Cochiti, $6,500 for San Carlos, $10,000 for Navaho, $5,000 for Crow, and $3,500 for Yakima.

San Ildefonso Pueblo.—In regard to the ditch at San Ildefonso, to which reference was made in my last annual report, Superintendent Harper reported August 4, 1902, as follows:

> This ditch was completed and turned over to the Indians on June 30, 1901, and has been operated by them since. They have taken good care of the property, cleaning it out well in the spring and repairing such damage as has been caused by severe storms. The most destructive storm in the past thirty years occurred last summer, and the Indians put the ditch in as good shape as when they received it, with four days' work.
>
> These people are now independent, having raised two good crops under the ditch and are extending the cultivated area. Before the completion of this ditch they had harvested no crops for four years, and were face to face with starvation. As the water supply is abundant at this point, I can see no reason why they should not continue to increase the amount of land farmed until they become quite prosperous.

Crow Reservation, Mont.—The work on the Bighorn Canal has been continued under Superintendent Hill during the present season and is nearing completion.

Navaho Reservation, Ariz. and N. Mex.—In the northern portion of the Navaho Reservation a drought has prevailed for three years, consequently there is no grass, and the sheep and horses of the Indians have died in large numbers. July 29 last, authority was granted by the Department to expend not exceeding $850 in developing springs and wells in that locality as a source of water supply for stock and domestic purposes; also to repair, where needed, the constructed ditches. It is hoped that this action will give some relief to the Indians.

The San Juan River, in the northern part of the reserve, according to the reports of Special Agent Armstrong and of George Butler, superintendent of irrigation, contains abundant water for irrigation

purposes and there are valuable lands adjacent which are susceptible of irrigation. It has been asserted that with a proper system of irrigation on the Navaho Reservation adjacent to the San Juan River two-thirds of the families of Indians occupying that reservation could make homes and become self-supporting. The office has planned to cause to be surveyed and staked off at an early date three or four small ditches leading from the San Juan River through productive lands and to have the same constructed as rapidly as possible. When these proposed ditches shall have been constructed, and the Indians located, the office will construct other ditches in places most suitable in case the Indians show a disposition to properly utilize those put under their control. The development of an irrigation system on the reservation lands adjacent to the San Juan River will go far toward solving the intricate Navaho problem.

Blackfeet Reservation, Mont.—In reply to the request of one Joseph Oker for information relating to a right of way for an irrigating ditch on the Blackfeet Reservation, Mont., the Office informed him, May 7, 1902, as to the act of February 15, 1901 (31 Stats., 790), and the regulations thereunder, and stated that if an application for irrigation right of way is referred to this Office, the matter will be referred for recommendation to the officer in charge of the reservation through which such right of way is sought to be acquired.

May 26, 1902, Messrs. Joseph Sturgeon and Peter H. Edlefson, Dupuyer, Mont., submitted informal application for permission to construct an irrigation ditch through the Blackfeet Reservation, taking the water from the Cut Bank Creek on that reservation. The agent for the Blackfeet Agency recommended that, inasmuch as the water of Cut Bank Creek will be needed to irrigate Indian lands, permission should not be granted parties to enter the reservation for the purpose of diverting its waters to lands outside. The parties mentioned were therefore informed, July 8, that an application under the act of February 15, 1901, for authority to construct an irrigating ditch on the Blackfeet Reservation would not receive the favorable recommendation of this office.

SALE OF INDIAN LANDS.

Inherited lands.—Section 7 of the Indian appropriation act of May 27, 1902, provides:

> That the adult heirs of any deceased Indian to whom a trust or other patent containing restrictions upon alienation has been or shall be issued for lands allotted to him may sell and convey the lands inherited from such decedent, but in case of minor heirs their interests shall be sold only by a guardian duly appointed by the proper court upon the order of such court, made upon petition filed by the guardian; but all such conveyances shall be subject to the approval of the Secretary of the Interior, and when so approved shall convey a full title to the purchaser, the same as if a final patent without restriction upon the alienation had been issued to the allottee. All allotted land so alienated by the heirs of an Indian allottee, and all lands so patented to a white allottee shall thereupon be subject to taxation under the laws of the State or Territory where the same is situate: *Provided*, That the sale herein provided for shall not apply to the homestead during the life of the father, mother, or the minority of any child or children.

Under this act all the lands that have been allotted in severalty to Indians may after their death be sold and conveyed by their heirs. This removes the restrictions hitherto existing as to the alienation of these lands, except such of them as are held as homesteads and those

held by the Five Civilized Tribes, the latter exception being based upon a decision of the Department rendered August 11, 1902. These inherited lands are now held in trust by the United States, but the approval by the Secretary of the Interior of such conveyances as may be made under this law is the final administration of the trust, and the purchaser takes a fee-simple title, clear, free, and unencumbered. The lands then become subject to taxation under the laws of the State or Territory in which they are situated.

This law divides the heirs of deceased allottees into two classes, adults and minors, the former being given the privilege of selling or not selling their inherited lands according to their own judgment, without any restriction other than that the sale must be approved by the Secretary of the Interior. The minors must act through guardians appointed by the courts, and, as in every case of guardianship, the interests of the minors should be protected, and their inherited lands should be sold or not, as will best promote their welfare. Any sale of such lands must be upon petition of the guardian filed in the court in which he is appointed and before becoming effective must be approved by the Secretary of the Interior. In every case the heirs are the beneficiaries, and the money derived from sales of inherited lands will be paid directly to them, if they are adults, or, if minors, to their guardians, to be administered in the proper court.

The idea seems to prevail among the Indians, or has been purposely disseminated, that the enactment of this law was for the purpose of forcing the sale of the inherited lands, and it has been necessary frequently to explain that such sales are not compulsory, but are in the nature of a privilege granted to the heirs—a privilege which will be of little or no benefit unless sound judgment and discretion are exercised.

The well-known eagerness to secure possession of Indian lands has been exemplified by the interest this law has created in and around Indian reservations and the numerous inquiries received as to the application of its various provisions. There are thousands of acres, worth millions of dollars, affected by the law, and capital is already seeking this productive field for employment; and it is only by strict rules as to conveyance that these heirs can be protected against connivance and fraud.

June 26, 1902, the Department approved certain rules which were to govern the sale of inherited lands, but subsequently they were found to be defective, and August 12 amended rules were approved and substituted. These amended rules were in operation until October 4. Then it was decided that the appraisement and sale of the lands under sealed bids was desirable, and the rules were again amended to that effect and, as approved on that date, are now in full force. The Department has also approved a blank form of deed so that conveyances may be uniform, so far as possible. The right to pass title to the lands by will or deed of gift or in any other manner than that set out in the law and rules will be denied.

Nothing but preliminary work, such as the distribution of copies of the rules and blank deeds and answering the many inquiries, has yet been performed. But few deeds have reached the Department, and the revision of the rules has prevented their approval or disapproval. It is thought this delay will prove an advantage, for it gives the heirs and their representatives time to consider whether the sale of

their lands is desirable or not, and gives them opportunity to become better acquainted with their rights, the value of their lands, and the purpose of the Department to secure the best returns possible for such as shall be sold.

On the death of allottees now living their allotments will also become subject to sale, so that work under this law will be nearly continuous. It is therefore specially important to have the method of procedure fixed upon the best possible basis. It now seems as if every practicable safeguard coming within the scope of the Department's authority under the law had been thrown around the heirs in the sale of their lands; but the actual operations under these rules remain to be performed and they may call for further changes from time to time.

Many intricate questions of heirship will arise, since that question is to be determined under the laws of the several States and Territories in which the lands are situated, and in order that good titles may be secured great care will be necessary to see that these various laws are properly interpreted and strictly complied with.

Umatilla, Oregon.—The Umatilla surplus lands embrace a large tract. They include all lands of the reservation not included within its new boundaries which are not allotted or required for allotments to the Indians and which were not sold at the appraised value at the public sale of Umatilla lands heretofore held. They have been occupied for a long time by white settlers without remuneration to the Indians. The Indians have been dissatisfied because they were not permitted to graze their flocks and herds upon these lands while they have been used and occupied by whites without compensation.

An act approved July 1, 1902 (32 Stats., 730), provides that all these lands shall be sold at private sale by the register of the land office in the district within which they are situated at not less than the appraised value thereof and in conformity with the provisions of prior legislation. It is provided that any bona fide settler upon any of these lands who is the owner of substantial improvements thereon, and who has improved any subdivision of the land with the intent of permanently residing upon it as a homestead, shall have a preference right to buy such land at any time within ninety days after the date of the act, upon making satisfactory proof of the local office as to settlement, intent, and improvements.

* * * * * * *

STOCKBRIDGE AND MUNSEE INDIANS IN WISCONSIN.

In my last annual report it was stated that the plan of settlement of the affairs of the Stockbridge and Munsee Indians, together with the draft of a bill to carry the plan into effect, was submitted to the Department by this office on January 24, 1901, and was transmitted to Congress on February 1, 1901. January 2, 1902, the attention of the Department was again invited to the matter and the hope expressed that the affairs of these Indians would receive early consideration by Congress and that the proposition of settlement negotiated by Inspector Cyrus Beede, or some equally meritorious plan, would receive Congressional sanction. A bill (S. 3620), identical in terms with the draft of the bill prepared by this office, was introduced by Senator Quarles during the last session of Congress, but it failed to become a law.

That the Indians are becoming impatient at the delay in reaching a settlement of their affairs with the Government is not to be wondered at. To allay their unrest and at the same time do them exact justice I sincerely trust that at the next session of Congress some definite action will be had respecting these Indians.

Very respectfully, your obedient servant,

W. A. JONES, *Commissioner.*

The SECRETARY OF THE INTERIOR.

REPORT OF THE COMMISSIONER OF PATENTS.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., September 10, 1902.

SIR: In compliance with your request I beg to submit herewith the following report of the business of the United States Patent Office for the fiscal year ended June 30, 1902:

Applications and caveats received.

Applications for letters patent	45,562
Applications for design patents	1,807
Applications for reissue patents	139
Applications for registration of trade-marks	2,460
Applications for registration of labels	1,020
Applications for registration of prints	270
Caveats	1,849
Total	53,107

Applications awaiting action.

Number of applications awaiting action on the part of the office on July 1, 1902	11,042

Applications for patents, including reissues, designs, trade-marks, labels, and prints.

June 30, 1893	43,589	June 30, 1898	44,216
1894	39,206	1899	40,320
1895	41,014	1900	45,270
1896	45,645	1901	48,075
1897	47,747	1902	51,258

Applications awaiting action on the part of the office.

June 30, 1893	8,283	June 30, 1898	12,187
1894	7,076	1899	2,989
1895	4,927	1900	3,564
1896	8,943	1901	7,683
1897	12,241	1902	11,042

Patents granted, and trade-marks, labels, and prints registered.

Letters patent granted (including reissues and designs)	27,387
Trade-marks registered	1,864
Labels registered	750
Prints registered	163
Total	30,164

Patents withheld and patents expired.

Letters patent withheld for nonpayment of final fees	4,123
Letters patent expired	20,335
Applications allowed awaiting payment of final fees	7,448

Expenditures.

	Expended.	Estimated liabilities.	Total.
Salaries	$770,524.25		$770,524.25
Scientific library	726.99	$711.86	2,000.00
Transportation of publications to foreign countries	561.15		
Postage on foreign matter	2,328.00		2,328.00
Stationery	12,689.05		12,689.05
Furniture	3,418.12		3,418.12
Carpets	1,590.54		1,590.54
Ice	501.49		501.49
Telephones	1,011.00		1,011.00
Washing towels	100.29		100.29
Sash and doors	37.00		37.00
Sundries	6,884.80		6,884.80
Law library	262.00		262.00
Official Gazette, illustrations, paid contractor	66,600.00		66,600.00
Photolithographing, paid contractor	100,791.69		100,791.69
Blue-print work, paid contractor	4,833.46		4,833.46
Printing and binding:			
Paid Public Printer for producing Official Gazette and indexes out of appropriation for 1902	92,412.45	4,928.00	97,340.45
Printing specifications	232,516.78		232,516.78
Miscellaneous printing and binding	25,790.97		25,790.97
International protection of industrial property	704.74		704.74
Total	1,324,284.77	5,639.86	1,329,924.63

Receipts and expenditures.

Receipts from all sources	$1,491,538.85
Expenditures (including total in all appropriations)	1,329,924.63
Surplus	161,614.22

Comparative statement.

June 30—	Receipts.	Expenditures.	June 30—	Receipts.	Expenditures.
1893	$1,288,809.07	$1,111,444.22	1898	$1,253,948.44	$1,092,449.83
1894	1,183,523.18	1,053,962.38	1899	1,209,554.88	1,148,663.48
1895	1,195,557.07	1,038,166.08	1900	1,358,228.35	1,247,827.58
1896	1,307,090.30	1,097,368.85	1901	1,408,877.67	1,288,970.13
1897	1,343,779.44	1,088,473.16	1902	1,491,538.85	1,329,924.63

Summarizing these tables, there were received in the last fiscal year 45,562 applications for mechanical patents, 1,807 applications for designs, 139 applications for reissues, 1,849 caveats, 2,460 applications for trade-marks, 1,020 applications for labels, and 270 applications for prints. There were 27,387 patents granted, including reissues and designs, and 1,864 trade-marks, 750 labels, and 163 prints were registered. The number of patents that expired was 20,335. The number of allowed applications which were by operation of law forfeited for nonpayment of the final fees was 4,123. The total receipts of the office were $1,491,538.85; the total expenditures were $1,329,924.63, and the surplus of receipts over expenditures, being the amount turned into the Treasury, was $161,614.22.

The preceding tables show that the number of applications filed during the last year is greater than during any other recent year, and it is in fact the greatest in the history of the Patent Office, having for

the first time exceeded fifty thousand. This is in spite of the fact that the number of design patent applications is less by 561 than for the preceding year. This last item shows the effect produced by a new construction given to the design patent law by this office, following the decision of the circuit court of appeals of the second circuit, in the case of Rowe *v.* Blodgett & Clapp Company, 112 Federal Reporter, 61; 98 O. G., 1286. Following the principle of that case I presented to Congress a bill to revise the design patent law, section 4929, Revised Statutes, and this bill was passed and became a law upon the 9th of May, 1902. Under the new statute, as well as under a proper construction of the old statute, the office has refused to grant design patents for mechanical constructions which fail to show any ornamental quality. I believe that the reduction in the number of applications filed for design patents represents no decrease in the amount of proper material sought to be protected by design patents, but that the amount of the reduction is made up of those mechanical cases which are no longer presented.

AMENDMENT OF SECTION 4883, REVISED STATUTES.

During the past year section 4883 of the Revised Statutes has been amended so that patents are now issued upon the signature of the Commissioner of Patents and the seal of the Patent Office, the change removing the necessity for the signature of the Assistant Secretary of the Interior. This amendment received Executive approval upon the 11th of April, 1902.

SCIENTIFIC LIBRARY.

During the past year the scientific library has been in large part established in new quarters, and it only awaits the completion of a small portion of the new steel stacks, for which Congress has already provided sufficient funds, to be entirely installed in its new quarters, where its usefulness will be much increased.

The appropriation for the purchase of books for this library should be increased. Of late years the appropriation has amounted to $2,000 per annum, and out of this amount a portion is used to pay for transporting publications of patents issued by the Patent Office to foreign governments. This charge has increased from $278 in 1888 to $561 in 1902, and for the first six months of the present year it has exceeded $300, and if the present rate of issue of patents shall continue, it will be over $600 per annum in future. This leaves the very inadequate sum of $1,400 for the purchase of technical books and periodicals. The periodicals and serials, or books published in parts, generally cost somewhat more than half of this amount, and being a permanent charge, the amount remaining available for new books is about $700 per annum. At no time has $1,400 per annum been sufficient to procure the annual output of scientific literature which should be furnished to enable the examining corps to keep in touch with the progress of the arts, and consequently the library has been continually falling behind and lacks many important works of late years. Within the last six months we have been obliged to forego the purchase of at least $800 worth of books which have been recommended by examiners and attorneys.

I believe that $4,000 per annum could be expended to the great advantage of the service and of inventors, this sum to include the transportation of publications of patents to foreign governments.

REDUCTION OF COMPLAINTS OF LOSSES.

In the past year there has been a very gratifying reduction in the number of complaints of losses of money in this office. From September 1, 1900, to June 30, 1901, the claims of losses aggregated $686.13, while during the corresponding ten months of the past fiscal year the aggregate of losses claimed was $9.35, the claimed losses of the latter period being 1⅓ per cent of those of the earlier.

In each case these losses include claims erroneously made, as well as claims for moneys lost in the mail. It is believed that the claimed losses of moneys during the past fiscal year can be charged entirely to losses in the mails and claims erroneously made.

NEW EXAMINERS.

The increase in the number of applications filed was indicated early enough in the last year so that in my last annual report to Congress I asked for an increase of 35 examiners of all grades, and 3 clerks. This increase was given to the office by Congress, and the additional force became available upon the 1st of July, 1902. Although the number of pending applications had increased considerably before this additional help became available, it is hoped that the examining corps as now constituted will be able to take care of the current business of the office.

CLASSIFICATION.

The work of classification of patents in this office has progressed satisfactorily during the past year, and 20 additional classes have been reclassified. This work would have progressed faster if it had not been necessary to reduce the available force to aid the examining divisions. It is hoped that this excellent work may continue until it is completed for all the remaining classes, as it has been determined by experience to be of great value to searchers in the various fields of invention.

PUBLICATION OF DECISIONS.

During the past year it has seemed desirable that the body of decisions controlling the practice in this office should be published in the Official Gazette to a sufficient extent to render it unnecessary to cite manuscript opinions, which has always been considered a hardship by the attorneys practicing before the office. There has been such an increase in the number of decisions published as will, it is hoped, remove this cause of complaint.

ROOM.

The growth of the business of this office and the accumulation of its records point continually to the necessity for more room, and I can only repeat the suggestion made in my report of last year that if more space were provided for the operations of this bureau, it would result in a saving of time and valuable documents and in more economical methods of work.

Respectfully submitted.

F. I. Allen,
Commissioner.

The Secretary of the Interior.

REPORT OF THE COMMISSIONER OF PENSIONS.

DEPARTMENT OF THE INTERIOR,
BUREAU OF PENSIONS,
August 1, 1902.

THE SECRETARY OF THE INTERIOR,
Washington, D. C.

SIR: I have the honor to submit to you the following report of the Bureau of Pensions for the fiscal year ended June 30, 1902.

SEC. 1.—PRESENT ROSTER, BUREAU OF PENSIONS.

Name.	Office.	Whence appointed
a Eugene F. Ware	Commissioner	Kansas.
a James L. Davenport	First deputy commissioner	New Hampshire.
a Leverett M. Kelley	Deputy commissioner	Illinois.
William H. Bayly	Chief clerk	Pennsylvania.
Walter J. Brooks	Assistant chief clerk	Do.
a Jacob F. Raub	Medical referee	Do.
Charles F. Whitney	Assistant medical referee	Illinois.
Stephen A. Cuddy	Law clerk	Wisconsin.
a Thomas W. Dalton	Chief board of review	New Jersey.
Alvin L. Craig	Chief special examination division	Pennsylvania.
Charles M. Bryant	Chief old war and navy division	Do.
a Warner Wilhite	Chief western division	Indiana.
Frank A. Warfield	Chief middle division	Connecticut.
a John S. Garrison	Chief eastern division	Michigan.
John W. Watson	Chief southern division	California.
a Gilbert C. Kniffin	Acting chief record division	Kentucky.
a Adolphus B. Bennett	Chief certificate division	New York.
William L. Soleau	Chief finance division	Maryland.
a John Hancock	Chief stationery division	Florida.
a T. Mannell Hermann	Chief mail division	Oregon.
George W. Barnes	Superintendent of building	Pennsylvania.

a Served in Union Army or Navy during the civil war.

* * * * * * *

SEC. 4.—PENSIONERS—CLASSIFIED.

The number of pensioners upon the rolls July 1, 1902, and for the four preceding years, respectively, is as follows:

Wars.	1902.	1901.	1900.	1899.	1898.
War, Revolutionary:					
Widows	4	4	4	4	5
Daughters	4	5	7	7	7
War 1812:					
Survivors	1	1	1	1	3
Widows	1,317	1,527	1,742	1,998	2,407
Indian wars:					
Survivors	903	1,086	1,370	1,656	2,019
Widows	3,320	3,479	3,739	3,899	4,067
Mexican war:					
Survivors	6,828	7,568	8,352	9,204	10,012
Widows	8,017	8,109	8,151	8,175	8,143
Service after March 4, 1861:					
General laws—					
Army invalids	277,965	293,186	305,980	316,834	327,080
Army widows	87,046	86,504	88,463	90,597	92,545
Navy invalids	4,360	4,489	4,622	4,721	4,833
Navy widows	2,263	2,298	2,314	2,293	2,300
Army nurses	634	650	646	653	655
Act June 27, 1890:					
Army invalids	426,188	422,481	415,265	405,987	399,366
Army widows	148,201	138,490	129,412	124,127	119,785
Navy invalids	15,953	15,633	15,392	14,925	14,543
Navy widows	6,977	6,621	6,314	6,139	5,944
War with Spain:					
General laws—					
Army invalids	6,282	3,344	822	117	.....
Army widows	2,727	1,981	845	165	.....
Navy invalids	329	211	60	6	.....
Navy widows	127	68	28	11	.....
Total	999,446	997,735	993,529	991,519	993,714

See sections 5 and 6, also Exhibits 1, 2, 4, 10, 11, 13, and 14.

SEC. 5.—PENSIONERS, BY WARS.

The following table is a condensation of the foregoing section and shows the number of pensioners according to the wars, and the increase and decrease from year to year:

Wars.	1902.	1901.	1900.	1899.	1898.
War of Revolution	8	9	11	11	12
War of 1812	1,318	1,528	1,743	1,999	2,410
Indian wars, 1832–1842	4,223	4,565	5,109	5,555	6,086
Mexican war	14,845	15,677	16,503	17,379	18,155
Civil-war invalids	725,100	735,789	741,905	742,467	745,822
Civil-war widows	244,487	234,563	226,503	223,809	221,229
Spanish-war invalids	6,611	3,555	882	123	.....
Spanish-war widows	2,854	2,049	873	176	.....
Total	999,446	997,735	993,529	991,519	993,714

The change in number of each during the last five years (1898–1902) is as follows:

Wars.	Decrease.	Increase.
War of Revolution	4	.....
War of 1812	1,092	.....
Indian wars, 1832–1842	1,863	.....
Mexican war	3,310	.....
Civil-war invalids	20,722	.....
Civil-war widows	.....	23,258
Spanish war	.....	9,465
Total	26,991	32,723

Net gain since 1898, 5,732.

See sections 4 and 6 and Exhibits 1, 2, 4, 10, 11, 13, and 14.

SEC. 6.—PENSIONERS—GAINS AND LOSSES.

There has been a gain during the last fiscal year ended June 30, 1902, of the number on the pension roll as follows:

Gain by act of the Bureau	43,661
Gain by special act of Congress	291
Total	43,952

There has been lost from the rolls the following number of pensioners during the same time for causes as follows:

By death	37,145
By remarriage	909
By legal limitation (minors)	1,369
By failure to claim	1,695
For other causes	1,123
Total	42,241

It will be noticed that the gain from special act, as above set forth, is 291, while as shown by section 41, the number of special acts was 1,141. The difference in the figures is owing to the fact that a large number of the special acts were increases and pertained to pensioners already on the roll.

The number of death notices of old soldiers, not now in the service,

received by the Bureau during the year was 50,128; but only 27,043 of them were pensioners.

The death rate among the pensioners for the coming year will be about 40,000, and the losses to the roll from other causes will be about 6,000.

Owing to the new laws enacted by Congress (see sections 42 and 43 hereof) the pension roll will probably pass the one million mark during the coming year.

The following table classifies the net gains and losses:

Class.	Number on roll July 1, 1901.	Number on roll June 30, 1902.	Gain.	Loss.
General law, Army:				
Invalids	293,186	277,965	.....	15,221
Nurses	650	634	.....	16
Widows, etc	86,513	87,054	541	.....
General law, Navy:				
Invalids	4,489	4,360	.....	129
Widows, etc	2,298	2,263	.....	35
War with Spain, Army:				
Invalids	3,344	6,282	2,938	.....
Widows, etc	1,981	2,727	746	.....
War with Spain, Navy:				
Invalids	211	329	118	.....
Widows, etc	68	127	59	.....
Act of June 27, 1890, Army:				
Invalids	422,481	426,188	3,707	.....
Widows, etc	138,490	148,201	9,711	.....
Act of June 27, 1890, Navy:				
Invalids	15,633	15,953	320	.....
Widows, etc	6,621	6,977	356	.....
War of 1812:				
Survivors	1	1	.....	.....
Widows	1,527	1,317	.....	210
War with Mexico:				
Survivors	7,568	6,828	.....	740
Widows	8,109	8,017	.....	92
Indian wars, 1832–1842:				
Survivors	1,086	903	.....	183
Widows	3,479	3,320	.....	159
Total	997,735	999,446	18,496	16,785
Net gain	.....	.....	1,711	.....

See sections 4 and 5; also exhibits 1, 2, 4, 10, 11, 13, and 14.

The foregoing table shows that there are 738,809 soldiers on the pension roll and 260,637 widows and dependents.

Sec. 7.—Location of pensioners.

The following table shows the present location of the pensioners in the United States and the amounts paid to pensioners in the different States and Territories during the year:

States and Territories.	Number.	Amount.
Alabama	3,694	$470,912.53
Alaska	87	13,021.14
Arizona	768	104,336.04
Arkansas	11,046	1,425,310.48
California	20,229	2,696,213.85
Colorado	8,352	1,119,637.76
Connecticut	12,040	1,401,009.97
Delaware	2,722	378,780.60
District of Columbia	8,720	1,362,155.12
Florida	3,092	400,244.52
Georgia	3,606	477,373.77
Idaho	1,736	221,888.64
Illinois	72,026	9,746,062.12

States and Territories.	Number.	Amount.
Indiana	66,586	$10,176,066.60
Indian Territory	3,396	346,608.33
Iowa	37,364	5,404,366.20
Kansas	40,765	5,958,695.10
Kentucky	28,437	3,967,068.09
Louisiana	6,347	895,316.36
Maine	19,668	2,870,847.60
Maryland	12,352	1,672,901.81
Massachusetts	39,725	5,191,904.51
Michigan	43,833	6,561,528.83
Minnesota	16,786	2,316,598.63
Mississippi	4,576	617,886.14
Missouri	52,813	7,081,492.02
Montana	1,776	232,386.75
Nebraska	17,364	2,312,491.57
Nevada	309	34,793.77
New Hampshire	8,742	1,293 430.79
New Jersey	20,669	2,459,682.49
New Mexico	1,781	227,520.15
New York	88,269	11,680,011.79
North Carolina	4,033	525,834.19
North Dakota	1,945	237,720.31
Ohio	104,060	15,104,092.54
Oklahoma	8,641	1,189,104.51
Oregon	5,647	735,750.96
Pennsylvania	103,697	13,322,286.95
Rhode Island	4,826	568,487.89
South Carolina	1,926	261,682.32
South Dakota	5,167	529,574.86
Tennessee	18,466	2,312,531.80
Texas	8,456	1,094,841.60
Utah	886	121,419.97
Vermont	8,925	1,397,264.40
Virginia	9,238	1,283,477.60
Washington	7,316	961,555.72
West Virginia	12,553	1,728,511.45
Wisconsin	27,910	4,128,279.94
Wyoming	883	121,606.32
Total	994,751	136,742,567.40

There are 4,695 pensioners outside of the United States, and the locations and amount paid such pensioners are found in Exhibit No. 13 hereto.

Sec. 8.—Annual cost of pension system.

The cost of the pension system is composed of several separate items:

First. The annual value of the roll (sec. 8).

Second. Total first payments, or accrued amounts paid when pension begins or certificate is issued (sec. 9).

Third. Cost of maintenance of the pension system, its bureau, and agencies (sec. 10).

Fourth. Loss to the roll by dropping of payment, by death of pensioner, and the like (sec. 6).

The term "annual value of roll" means the amount required annually to pay the regular pension certificates then outstanding.

Year.	Annual value of roll.	Total first payments.	Cost of maintenance.	Loss to the roll.	Paid for pensions, total.
1902	$132,152,800	$8,677,548	$3,831,379	$6,284,532	$137,504,268
1901	131,568,216	9,934,764	3,868,795	6,270,521	138,531,484
1900	131,534,544	9,828,525	3,841,707	6,512,262	138,462,131
1899	131,617,961	9,247,958	4,147,518	5,890,949	138,355,053
1898	130,968,465	15,542,914	4,114,091	6,541,490	144,651,880

See also Exhibits 2, 3, 5, 10, and 11.

SEC. 9.—FIRST PAYMENTS.

In the granting of pensions the adjudication generally relates back to a former date, which makes a first payment of greater amount than a regular quarterly payment. Not unfrequently these first payments are over $1,000, and sometimes when a case has been long pending it may be much more. The following table shows the number and amount of these first payments:

	1902.	1901.	1900.	1899.	1898.
Number of first payments	97,551	90,220	82,300	69,845	90,862
Amount of first payments	$8,677,548	$9,934,764	$9,828,525	$9,247,958	$15,542.914
Average amount	$88.95	$110.11	$119.42	$132.40	$171.60

See also Exhibit 3.

SEC. 10.—ANNUAL COST OF MAINTENANCE.

The following table shows the yearly cost of operating and maintaining the Bureau and the agencies, outside of payment of pensions proper:

	1902.	1901.	1900.	1899.	1898.
BUREAU.					
Number of employees	1,741	1,741	1,741	1,741	1,836
Salaries	$2,114,153.75	$2,118,993.20	$2,135,542.55	$2,151,578.85	$2,254,181.40
Paid surgeons	a 573,620.98	902,604.42	713,027.65	932,684.78	963,600.87
Other expenses	376,340.72	379,646.70	435,854.23	465,805.63	429,031.14
Total cost	3,064,115.45	3,401,244.32	3,284,424.43	3,550,069.26	3,646,813.41
AGENCIES.					
Number of employees	432	421	429	430	431
Salaries	$72,000.00	$72,000.00	$72,000.00	$72,000.00	$72,000.00
Clerk hire	415,164.31	412,520.21	406,712.73	404,456.98	416,685.68
Contingent	39,249.36	41,372.73	44,099.13	46,039.51	47,944.16
Total cost	526,413.67	525,892.94	522,812.16	522,496.49	536,629.84
Grand total:					
Employees	2,173	2,162	2,170	2,171	2,267
Cost	$3,590,529.12	$3,927,137.26	$3,807,236.59	$4,072,565.75	$4,183,443.25

a Incomplete; reports not all in.

It is thus seen that the pension system since the beginning of the Government has cost $2,992,509,019.37. This is exclusive of the establishment of the Soldiers' Homes.

Exhibits Nos. 5 and 11 show the foregoing facts more in detail. See also section 11.

SEC. 11.—GRAND TOTAL COST OF PENSIONS.

The disbursements for pensions by the United States from July 1, 1790, to June 30, 1865, were $96,445,444.23.

The total of pensions and expenses from the latter date to the present is, with the number of pensioners, as follows:

Year.	Paid as pensions.	Cost, maintenance, and expenses.	Total.	Number of pensioners.
1866	$15,450,549.88	$407,165.00	$15,857,714.88	126,722
1867	20,784,789.69	490,977.35	21,275,767.04	155,474
1868	23,101,509.36	553,020.34	23,654,529.70	169,643
1869	28,513,247.27	564,526.81	29,077,774.08	187,963
1870	29,351,488.78	600,997.86	29,952,486.64	198,686
1871	28,518,792.62	863,079.00	29,381,871.62	207,495
1872	29,752,746.81	951,253.00	30,703,999.81	232,189
1873	26,982,063.89	1,003,200.64	27,985,264.53	238,411
1874	30,206,778.99	966,794.13	31,173,573.12	236,241
1875	29,270,404.76	982,695.35	30,253,100.11	234,821
1876	27,936,209.53	1,015,078.81	28,951,288.34	232,137
1877	28,182,821.72	1,034,459.33	29,217,281.05	232,104
1878	26,786,009.44	1,032,500.09	27,818,509.53	223,998
1879	33,664,428.92	837,734.14	34,502,163.06	242,755
1880	56,689,229.08	935,027.28	57,624,256.36	250,802
1881	50,583,405.35	1,072,059.64	51,655,464.99	268,830
1882	54,313,172.05	1,466,236.01	55,779,408.06	285,697
1883	60,427,573.81	2,591,648.29	63,019,222.10	303,658
1884	57,912,387.47	2,835,181.00	60,747,568.47	322,756
1885	65,171,937.12	3,392,576.34	68,564,513.46	345,125
1886	64,091,142.90	3,245,016.61	67,336,159.51	365,783
1887	73,752,997.08	3,753,400.91	77,506,397.99	406,007
1888	78,950,501.67	3,515,057.27	82,465,558.94	452,557
1889	88,842,720.58	3,466,968.40	92,309,688.98	489,725
1890	106,094,250.39	3,526,382.13	109,620,632.52	537,944
1891	117,312,690.50	4,700,636.44	122,013,326.94	676,160
1892	139,394,147.11	4,898,665.80	144,292,812.91	876,068
1893	156,906,637.94	4,867,734.42	161,774,372.36	966,012
1894	139,986,726.17	3,963,976.31	143,950,702.48	969,544
1895	139,807,788.78	4,338,020.21	144,145,808.99	970,524
1896	138,215,174.98	3,991,375.61	142,206,550.59	970,678
1897	139,949,717.35	3,987,783.07	143,937,500.42	976,014
1898	144,651,879.80	4,114,091.46	148,765,971.46	993,714
1899	138,355,052.95	4,147,517.73	142,502,570.68	991,519
1900	138,462,130.65	3,841,706.74	142,303,837.39	993,529
1901	138,581,483.84	3,868,795.44	142,400,279.28	997,735
1902	137,504,267.99	3,831,378.96	141,335,646.95	999,446
Total	2,804,408,857.22	91,654,717.92	2,896,063,575.14	

The difference in the cost of maintenance, as shown in sections 10 and 11, for the fiscal year ended June 30, 1902, is due to the fact that in section 10 $240,849.84, disbursed on account of fees of examining surgeons during that year, which was chargeable to the appropriations for the fiscal year ended June 30, 1901, is omitted, but is included in the cost of maintenance and expenses referred to in section 11.

SEC. 12.—PENSIONS ON ACCOUNT OF THE SEVERAL WARS.

The following amounts have been paid to soldiers, their widows, minor children, and dependent relatives on account of military and naval service during the wars in which the United States has been engaged:

Revolutionary war (estimated)	$70,000,000.00
War of 1812 (on account of service, without regard to disability)	45,025,297.09
Indian wars, 1832–1842 (on account of service, without regard to disability)	5,814,206.53
War with Mexico (on account of service, without regard to disability)	31,861,337.57
War of the rebellion	2,744,878,276.16
War with Spain	3,275,184.10
Actual total disbursement in pensions	2,900,854,301.45

The amounts paid as pensions on account of disabilities and deaths as results of military and naval service during the wars of 1812, and with Mexico, and in time of peace, to the beginning of the war with Spain, are included in the payments on account of the war of the rebellion.

It is estimated that $16,000,000 were paid in pensions for *disabilities and deaths* due to military and naval service in the wars of 1812, and with Mexico, and during the time of peace prior to the war of the rebellion, making the payments of pensions to soldiers and sailors of the war of the rebellion and of the regular military and naval establishment since the close of said war of the rebellion, and their widows, children, and dependent relatives, amount to $2,728,878,276.16. This is outside of the cost of maintaining Bureau, agencies, and Soldiers' Homes.

The total disbursements in section 12 of $2,900,854,301.45 is found by adding to the total paid as pensions in section 11 of $2,804,408,857.22 the further sum of $96,445,444.23 found in the second line of section 11.

SEC. 13.—TOTAL ORIGINAL PENSION ISSUES.

The number of original pension issues from 1862 to 1902, inclusive, is:

Year.	Applications.	Claims allowed.	Year.	Applications.	Claims allowed.
1862	2,487	462	1884	41,785	34,192
1863	49,332	7,884	1885	40,918	35,767
1864	53,599	39,487	1886	49,895	40,857
1865	72,684	40,171	1887	72,465	55,194
1866	65,256	50,177	1888	75,726	60,252
1867	36,753	36,482	1889	81,220	51,921
1868	20,768	28,921	1890	105,044	66,637
1869	26,066	23,196	1891	696,941	156,486
1870	24,851	18,221	1892	246,638	224,047
1871	43,969	16,562	1893	119,361	121,630
1872	26,391	34,333	1894	57,141	39,085
1873	18,303	16,052	1895	45,361	39,185
1874	16,734	10,462	1896	42,244	40,374
1875	18,704	11,152	1897	50,585	50,101
1876	23,523	9,977	1898	48,732	52,648
1877	22,715	11,326	1899	53,881	37,077
1878	44,587	11,962	1900	51,964	40,645
1879	57,118	31,346	1901	68,373	44,868
1880	141,466	19,545	1902	47,965	40,173
1881	31,116	27,394			
1882	40,939	27,664	Total	2,872,376	1,742,077
1883	48,776	38,162			

SEC. 14.—APPROPRIATIONS AND BALANCES.

The following table shows the amounts appropriated during the last five years for the payment of pensions, the expenses of paying pensions and settling the claims for pensions filed in the United States Pension Bureau at the seat of Government, the cost of maintaining the entire pension system, and the unexpended balances of the appropriations at the close of the years:

Year.	Appropriated.	Cost of maintenance of system.	Unexpended balance.
1902	$147,873,461.46	$141,090,428.03	$6,783,033.43
1901	148,788,840.93	142,214,144.05	6,574,696.88
1900	147,889,073.76	142,081,401.51	5,807,672.25
1899	144,128,678.10	142,203,315.09	1,925,363.01
1898	152,385,254.09	148,587,451.36	3,797,802.73
Total	741,065,308.34	716,176,740.04	24,888,568.30

See also Exhibits I and 11.

The sums referred to in section 14 charged to the cost of maintenance of the system are different from those referred to in sections 10 and 11, for the reason that this section addresses itself to appropriations and costs during the specific years referred to, consequently the disbursements on account of fees of surgeons in one year belonging to a previous year have been put in their proper places and the repayments to the Treasury for numerous reasons have been deducted, so that this table shows the net transactions for the fiscal years referred to.

SEC. 15.—AVERAGE VALUE OF PENSIONS.

In the following table will be found the average annual value of each pension for the last five years, 1898–1902 inclusive.

	1902.	1901.	1900.	1899.	1898.
Average annual value each pension	$132.23	$131.87	$132.39	$132.74	$131.79
Average annual value under general law	171.28	168.67	167.53	165.70	163.21
Average annual value, act 1890	108.59	108.09	108.28	108.99	108.11
Average annual value, war with Spain	140.78	153.50	169.10	196.53	.....

Also see Exhibit No. 1.

SEC. 16.—RATES OF EXISTING PENSIONS.

The following table shows the number of pensions, and the monthly rate thereof, as condensed from exhibits Nos. 14 to 14d, herewith.
Total number of pensions, June 30, 1902, was 999,446.

Rate.	Number of pensions.	Rate.	Number of pensions.
$6 and under	143,181	From $25 to $30, inclusive	17,513
From $6 to $8, inclusive	348,197	From 30 to 36, inclusive	2,551
From 8 to 10, inclusive	71,919	From 36 to 45, inclusive	2,228
From 10 to 12, inclusive	293,605	From 45 to 50, inclusive	1,404
From 12 to 14, inclusive	22,969	From 50 to 72, inclusive	1,945
From 14 to 15, inclusive	3,777	From 72 to 100, inclusive	48
From 15 to 16, inclusive	10,132	At $166⅔	4
From 16 to 17, inclusive	42,996	At $208⅓	1
From 17 to 18, inclusive	790	At $466⅔	3
From 18 to 20, inclusive	7,370		
From 20 to 24, inclusive	25,570	Total	999,446
From 24 to 25, inclusive	3,245		

The average value of a pension is $132.23 (sec. 15).
Over one-half of the pensions are $10 or under.

SEC. 17.—PENSION AGENTS AND AGENCIES.

The pensions of all the foregoing pensioners are paid through 18 agencies.

The names of the agents, and other facts, are found in the following table:

Place.	Name of agent.	Pensioners June 30, 1902.	Money disbursed in 1902 to pensioners.
Augusta, Me	Selden Connor	18,649	$2,743,138.61
Boston, Mass	Augustus J. Hoitt	57,626	7,289,969.73
Buffalo, N. Y	Charles A. Orr	47,242	6,288,328.78
Chicago, Ill	Jonathan Merriam	77,203	10,527,531.27
Columbus, Ohio	Joseph W. Jones	103,156	14,942,136.25
Concord, N. H	Hugh Henry	17,807	2,700,256.15
Des Moines, Iowa	Emery F. Sperry	55,037	7,772,795.37
Detroit, Mich	Oscar A. Janes	43,820	6,560,874.62
Indianapolis, Ind	Albert O. Marsh	66,955	10,265,758.22
Knoxville, Tenn	John T. Wilder	61,748	7,998,081.52
Louisville, Ky	Leslie Combs	28,536	3,968,019.28
Milwaukee, Wis	Edwin D. Coe	50,808	7,093,551.02
New York City, N. Y	Michael Kerwin	53,456	6,851,273.62
Philadelphia, Pa	St. C. A. Mulholland	63,437	7,772,524.08
Pittsburg, Pa	John W. Nesbit	48,071	6,427,348.85
San Francisco, Cal	Jesse B. Fuller	36,735	4,841,764.92
Topeka, Kans	Wilder S. Metcalf	115,855	15,905,135.59
Washington, D. C	Sidney L. Willson	53,305	7,452,254.29
Total		999,446	137,400,742.17

For further information concerning the agencies see Exhibits Nos. 4, 5, 6, 7, 8, and 10.

For the cost of maintaining these agencies and force employed see sections 8 and 10.

The amount paid by pension agents does not include $103,525.82 disbursed by the accounting officers of the Treasury in the final adjustment of pension claims, as further shown in Exhibit No. 4.

Sec. 18.—Historical—first claims.

The first invalid claim allowed on account of service during the war of the rebellion was that of Leopold Charrier, who served in Company G, Twelfth New York Volunteer Militia Infantry. The claim was filed August 8, 1861, and was allowed August 12, 1861, by certificate No. 9487. Soldier's address was New York City.

The first widow's claim allowed on account of service during the war of the rebellion was that of Caroline Ohl, widow of Martin Ohl, who served in Company B, Turner Rifles, District of Columbia Volunteers. The claim was filed September 14, 1861, and was allowed October 25, 1861, and a reissue made September 23, 1862, by certificate No. 1. The widow's address was Washington, D. C.

Sec. 19.—Applications for pension.

There is no law or order fixing or limiting the number of applications that a claimant for a pension, or for an increase of pension, may file in the Bureau. Immediately upon the rejection of an original application, or of an application for increase, the claimant may file a new application.

Immediately upon the allowance of an original application, or an application for increase, a successful claimant may file a new application for an increase.

There is nothing improper in this, because the laws of Congress recognize the progressive disabilities arising from wounds and disease and provide for increases by reason thereof.

The limit fixed by the Department upon the hearing and determination of these applications is that the adjudications shall be six months apart. That is, to illustrate, if a pension be granted or refused, the next application can not be heard until six months afterwards.

By reason of the ravage of disease, or by reason of rapid decline, it not unfrequently happens that several applications are filed before the time of adjudication arrives, so that duplicate applications are quite common, and sometimes as many as four or five. If one application is granted the others are rejected.

In addition to this, different and separate applications are often filed by a soldier claiming under different acts of Congress, or by and through several separate attorneys.

For this reason it happens that the number of rejections does not represent an equal number of separate claimants. Very far from it; many of these rejected claimants are already drawing pensions under one law or another. Hence the following table without the foregoing explanation might be misleading:

	1902.	1901.	1900.	1899.	1898.	Total.
Applications filed	188,626	219,179	181,005	155,952	207,594	952,356
Rejected	118,464	120,090	124,129	107,919	85,629	556,231
Granted	117,268	106,990	102,596	85,160	96,360	508,374

From the foregoing it will be seen that the Bureau during 1902 handled 47,106 more applications than it received during that year, which shows progress in catching up with the work.

See sections 20, 21, and 36, and exhibit 12.

SEC. 20.—APPLICATIONS—"NO BENEFIT."

In addition to the number of applications granted and rejected, as shown in the table found in section 19, the Bureau adjudicated 10,441 claims in which an allowance would confer no benefit upon the claimant; i. e., the applicant is now in receipt of a pension at an equal or higher rate than that which could be allowed under the pending application. In this class of cases the claimant is afforded an opportunity to elect whether he will retain his present pension or surrender his certificate and receive a new one under another law at the same rate.

It is fair to state that prior to this year these claims were reported as "rejected claims" on the ground that they conferred no benefit. They are not included in the number of "rejected" claims for the year 1902, found in the table, section 19, nor are they counted as claims "granted" unless the claimant elects to take this pension in lieu of that which he now receives.

SEC. 21.—APPLICATIONS FOR INCREASE.

The applications for increase of pension forwarded to the adjudicating divisions from July 1, 1901, to June 30, 1902, inclusive, are as follows:

	Act of June 27, 1890.	General laws.	War with Spain.	Total.
1901.				
July	4,207	2,558	87	6,852
August	4,271	2,805	92	7,168
September	4,530	2,887	79	7,496
October	4,118	2,944	109	7,171
November	4,241	2,983	92	7,316
December	3,566	2,779	75	6,420
Total first six months	24,933	16,956	534	42,423
1902.				
January	5,349	3,926	104	9,379
February	4,006	2,453	97	6,556
March	6,186	3,909	123	10,218
April	6,052	4,378	158	10,588
May	6,559	4,829	144	11,532
June	8,783	6,214	192	15,189
Total second six months	36,935	25,709	818	63,462
Total for year	61,868	42,665	1,352	105,885
Recorded in old war and navy division	2,328	2,920	35	5,283
Grand total	64,196	45,585	1,387	111,168

SEC. 22.—INCREASE CERTIFICATES.

As pensioners grow older their disabilities in many cases increase with age, and upon proper showings new certificates at higher rates are issued.

The following table shows the number and rate of such increase certificates for five years last past:

	1902.	1901.	1900.	1899.	1898.
Number of increases	43,474	38,185	44,408	32,148	26,760
Annual value	$1,790,461	$1,853,676	$2,442,761	$2,006,691	$1,693,428

SEC. 23.—WAR WITH SPAIN.

The following table shows the condition of the Bureau with reference to the war with Spain:

	1902.	1901.	1900.	1899.	Total.
Original invalid applications	10,210	12,814	12,038	15,009	50,071
Other applications	2,783	2,639	1,580	2,593	9,595
Applications admitted	4,530	4,212	1,511	303	10,556
Applications rejected	7,977	6,365	920	41	15,303
Applications on hand	34,456	33,541	28,545	17,335	34,456
Certificates issued	4,530	4,212	1,511	303	10,556
Total annual payment	$1,738,446.28	$1,175,225.76	$332,905.25	$28,606.81	$3,275,184.10

For further information see sections 5, 6, 12, 15, 21, 51, 52, and 53; also Exhibits 5 and 6.

* * * * * * *

All of which is respectfully submitted.

E. F. WARE,
Commissioner.

REPORT OF THE COMMISSIONER OF RAILROADS.

DEPARTMENT OF THE INTERIOR,
OFFICE OF COMMISSIONER OF RAILROADS,
Washington, D. C., November 1, 1902.

SIR: In compliance with the provisions of the act of Congress creating this Bureau, approved June 19, 1878 (20 Stat. L., 169), I have the honor to submit the following report of the physical and financial condition of the several railroad companies coming within the jurisdiction of the Bureau which have received subsidies in bonds or lands and which have submitted such reports as have been called for under the law.

Of the bonded companies, all have settled their indebtedness to the Government in some manner with the exception of the Central Branch; the condition of that company is unchanged since the date of my last report. The Sioux City and Pacific has been purchased by the Chicago and North-Western Railway Company, and its operations are embodied in the report of that company. Of the 19 remaining companies subsidized with lands, several have declined to report specially to the Bureau, but all have sent such reports as were made to the stockholders.

Attention is invited to the following tables, the first one showing the steady increase in net earnings for the last four years, the increase for 1902 being especially large, amounting to over $20,000,000 more than the net earnings for 1901.

Increase in net earnings.

Road.	1899.	1900.	1901.	1902.
Union Pacific	$2,076,775.16	$1,325,211.27	$525,532.13	$2,542,989.06
Central Pacific	a 162,268.05	1,023,726.90	215,395.70	80,651.73
Central Branch	a 105,358.20	184,521.49	a 51,407.30	a 28,610.34
Atchison, Topeka and Santa Fe	1,372,637.49	3,282,360.29	2,319,134.49	1,887,139.26
Chicago and North-Western	1,310,991.07	2,267,388.03	137,010.61	659,163.25
Chicago, Burlington and Quincy	513,142.79	940,138.18	2,905,669.66	2,058,587.57
Chicago, Milwaukee and St. Paul	1,359,698.60	a 883,940.68	927,654.34	1,024,720.47
Chicago, Rock Island and Pacific	39,186.59	676,349.80	531,448.35	1,931,518.24
Chicago, St. Paul, Minneapolis and Omaha	811,403.96	a 178,931.35	207,818.57	466,979.03
Choctaw, Oklahoma and Gulf	10,630.34	785,187.28	885,075.54	122,880.15
Dubuque and Sioux City	153,579.90	a 254,440.64	a 36,336.20	a 13,177.09
Missouri, Kansas and Texas	49,665.37	a 35,292.50	426,688.02	265,124.09
Missouri Pacific	a 281,993.09	578,793.85	846,167.49	a 357,201.23
Northern Pacific	1,047,540.78	1,827,011.14	224,388.69	3,948,587.50
Oregon and California	a 19,618.42	a 97,703.72	104,655.44	236,127.02
St. Joseph and Grand Island	a 60,224.36	a 23,123.06	180,526.31	a 8,406.52
St. Louis and San Francisco	12,893.19	386,165.81	939,832.21	2,913,471.37
St. Louis, Iron Mountain and Southern	a 248,813.03	1,297,379.62	1,193,912.46	a 40,377.72
Santa Fe Pacific	291,884.30	1,822,449.70	a 14,908.92	501,880.97
Southern Pacific of California	a 1,094,219.12	1,415,603.74	588,850.91	4,463,741.77
Texas and Pacific	232,278.87	a 60,747.71	1,597,745.47	a 840,746.06
Wisconsin Central	174,277.68	a 4,048.89	a 198,669.26	300,285.37

a Decrease.

The following table shows the increase in earnings and expenses for 1902 over those for 1901, being over $45,000,000 in earnings and over $27,000,000 in expenses. The large increase in expenses is due to the many permanent improvements which have been made and the increase in length of lines, aggregating over 2,600 miles, as well as to the additions and betterments to roadway and rolling stock which have been almost universal.

Increase in earnings and expenses.

Road.	Earnings.	Expenses.
Union Pacific	$1,663,527.80	a $879,461.26
Central Pacific	862,822.17	782,170.44
Central Branch	a 137,667.27	a 109,056.93
Atchison, Topeka and Santa Fe	2,142,731.51	255,592.25
Chicago and North-Western	3,475,251.32	2,816,088.07
Chicago, Burlington and Quincy	3,255,851.82	1,197,264.25
Chicago, Milwaukee and St. Paul	3,244,112.19	2,219,391.72
Chicago, Rock Island and Pacific	3,021,150.69	1,089,632.45
Chicago, St. Paul, Minneapolis and Omaha	1,114,540.77	647,561.74
Choctaw, Oklahoma and Gulf	1,438,422.80	1,315,542.65
Dubuque and Sioux City	449,474.90	462,651.99
Missouri, Kansas and Texas	988,316.80	723,192.71
Missouri Pacific	569,403.74	926,604.97
Northern Pacific	8,826,396.13	4,877,808.63
Oregon and California	571,[illegible]22.52	338,695.50
St. Joseph and Grand Island	a 50,164.58	a 41,758.06
St. Louis, Iron Mountain and Southern	1,621,128.92	1,661,506.64
St. Louis and San Francisco	8,814,518.19	5,901,046.82
Santa Fe Pacific	1,209,777.49	707,896.52
Southern Pacific	9,695,979.93	5,232,238.16
Texas and Pacific	191,225.37	1,031,971.43
Wisconsin Centr	717,195.58	416,910.21

a Decrease.

BOND-AIDED ROADS.

UNION PACIFIC RAILROAD COMPANY.

This company received from the United States, besides a large grant of land, a loan of bonds secured by a second mortgage on its road. On November 1, 1897, its main line was sold to the purchasing trustees of the Union Pacific reorganization committee, under a decree of the United States court for the district of Nebraska, when the entire bonded indebtedness of the company to the Government was settled. The balance found due the Government at that time was $40,253,605.49, which was paid in four equal installments within thirty, forty, fifty, and sixty days from the above-mentioned date. The pecuniary interests of the Government in the road have terminated, but the company still comes within the requirements of law regarding reports to this Bureau on account of its land grant.

On May 1, 1901, the company issued $93,957,000 of 4 per cent convertible bonds to acquire the stock of the Southern Pacific Company and other securities. This acquisition gave to the Union Pacific control of all the lines formerly governed by the Southern Pacific Company and in consequence a through line to the Pacific coast.

By the acts of 1862 and 1864 lands were granted by the United States to the companies forming the present corporation as follows:

	Acres.
Union Pacific	12,000,000
Kansas Pacific	6,000,000
Denver Pacific Railway and Telegraph	1,400,000
Total	19,400,000

The following points are the land grant termini: Union Pacific, Bridge Junction, Omaha, Nebr., and Union Depot, Ogden, Utah; Kansas Pacific, Kansas City, Mo., and a point on the railroad between Monument and Gopher stations and Eighteenth street, Denver, Colo.; Denver Pacific, Denver, Colo., and Cheyenne, Wyo.

The records of the General Land Office show that during the year

ended June 30, 1902, there were patented to the company 2,209,083.48 acres. On that date the number of acres received by the company through United States patent was as follows:

	Acres.	Acres.
Union Pacific:		
In Colorado	552,014.73	
In Nebraska	4,842,956.90	
In Wyoming	3,343,708.28	
In Utah	548,561.41	
		9,287,241.32
Kansas Pacific:		
In Kansas	3,559,115.00	
In Colorado	633,589.30	
		4,192,704.30
Denver Pacific, in Colorado		561,198.58
Total		14,041,144.20

The report of the company shows that to June 30, 1902, they had acquired by purchase in the reorganization unsold lands, including lands not yet patented, amounting to 4,094,248.93 acres, and by cancellation of contracts 1,737,035.59 acres. The total cash receipts from all sales of land to that date were $1,433,333.64, and there were outstanding on account of time sales $2,404,527.39. The average price per acre now asked is 70 cents.

At the close of the fiscal year the number of miles operated was 2,941.84, although from July 1, 1901, to January 31, 1902, the company operated in addition to this and jointly with other companies 74.49 miles for freight service only. The track is laid with steel rails of various weights from 52 to 90 pounds per yard; iron rails are laid on 44.76 miles, which weigh from 50 to 56 pounds per yard. The cross-ties are of oak, fir, pine, and cedar, and average 2,692 to the mile. The track is fenced for 2,092.32 miles. The ballast consists of 21.90 miles of stone, 1,009.97 miles of gravel, 106.58 miles of cinder, 189.55 miles of burnt clay, 22.05 miles of slag, and 1,598.83 miles of natural soil. The bridges aggregate 151,141 feet in length.

The equipment at the close of the fiscal year consisted of 489 locomotives, 348 cars in the passenger service, 13,325 in the freight service, and 1,825 in the road and miscellaneous services. The additions and betterments to railway, etc., amounted to $1,968,266.01, charged to construction account; additions and betterments to rolling stock amounted to $647,908.09 charged to equipment account. The assessed valuation for taxation of roadway, bridges, track, buildings, rolling stock, etc., averages $9,052 per mile, or a total of $26,630,830.

The express business is transacted by the Pacific Express Company, the railway company receiving 50 per cent. of the gross earnings. The 5 miles of track from Ogden, Utah, to the western terminus of the road are leased to the Central Pacific Railway Company, under a contract dated February 10, 1888, for a consideration of $20,000 per annum.

The following statements show the operations of the company for the fiscal year and their general balance sheet on June 30, 1902:

Comparative statement of earnings and expenses.

	Year ended—		Difference.	
	June 30, 1902.	June 30, 1901.	Increase.	Decrease.
EARNINGS.				
Passenger	$4,957,245.69	$4,410,333.65	$546,912.04	
Freight	19,452,978.42	18,462,554.34	990,424.08	
Mail	1,357,865.70	1,353,765.50	4,100.20	
Express	395,192.35	389,290.97	5,901.38	
Miscellaneous	972,845.84	856,655.74	116,190.10	
Total	27,136,128.00	25,472,600.20	1,663,527.80	
EXPENSES.				
Maintenance of way and structures	3,409,605.26	3,192,003.37	217,601.89	
Maintenance of equipment	3,173,731.20	3,203,329.18		$29,597.98
Conducting transportation	7,110,323.99	7,362,491.02		252,167.03
General expenses and taxes	649,261.85	1,464,559.99		815,298.14
Total	14,342,922.30	15,222,383.56		879,461.26
Net earnings	12,793,205.70	10,250,216.64	2,542,989.06	
Miles operated	2,941.84	2,958.14		16.30
Earnings per mile	$9,224.20	$8,611.02	$613.18	
Expenses per mile	4,875.49	5,145.93		$270.44
Net earnings per mile	4,348.71	3,465.09	883.62	
Percentage of expenses to earnings	52.85	59.75		6.90

Revenue and expenditures for year.

REVENUE.		
Earnings	$27,136,128.00	
Profits on stocks of other companies	3,595.12	
Profits on stocks of this company	13,140.00	
Dividends on stocks of other companies	698,532.00	
Interest on bonds of other companies	3,635,545.34	
Interest on miscellaneous investments	851,862.61	
Total		$32,338,803.07
EXPENDITURES.		
Operating expenses	14,342,922.30	
Interest on first-mortgage bonds	4,000,000.00	
Interest on other funded debt	3,643,373.37	
Interest on other debt	1,491,065.32	
Losses on miscellaneous investments	824.71	
Betterments and improvements	1,000,000.00	
Taxes	822,260.97	
Dividends	8,186,634.00	
Total		33,487,080.67
Deficit		1,148,277.60

General balance sheet.

ASSETS.	
Coat of road and fixtures	$225,441,858.91
Cost of equipment	10,433,678.10
Land contracts, land cash, etc.	3,260,541.57
Fuel, material and stores on hand	2,017,342.48

Cash on hand	$3,243,623.79	
Stocks and bonds	183,285,656.13	
Improvement and equipment fund	120,085.20	
Bills receivable	734,711.16	
Accounts receivable	10,860,598.26	
Due from other companies on account of traffic	376,135.69	
Due from United States	579,154.35	
Total		$440,353,385.64

LIABILITIES.

First-mortgage bonds	100,000,000.00	
Interest on same due and accrued	2,025,750.00	
Other funded debt	91,952,000.00	
Interest on same due and unpaid	32,680.00	
Interest on same accrued not due	598,719.99	
Dividends unpaid	16,252.00	
Bills payable	28,750,000.00	
Accounts payable	781,836.75	
Pay rolls and vouchers	944,984.45	
Land accounts	3,920,793.85	
Taxes assessed not due	506,683.49	
Insurance fund	115,238.79	
Fund for dividends payable October 1, 1902	4,114,936.00	
Capital stock	203,600,000.00	
Total		437,359,875.32
Surplus		2,993,510.32

* * * * * * *

It affords me pleasure to commend the general efficiency of the employees of the Bureau.

I have the honor to be, very respectfully, your obedient servant,

JAMES LONGSTREET,
Commissioner.

Hon. E. A. HITCHCOCK,
Secretary of the Interior.

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REPORT OF THE DIRECTOR OF THE CENSUS.

CENSUS OFFICE,
Washington, D. C., November 1, 1902.

SIR: I have the honor to submit the following report concerning the operation of the Census Office for the year ending November 1, 1902:

The law establishing a permanent Census Office became effective July 1, 1902, and therefore the period covered by this report includes eight months of operation as a temporary office, and four months of operation as a permanent office.

The force of the temporary office was employed in tabulating and publishing the data collected by the enumerators for the Twelfth Census. This work was practically completed on July 1, and the results were presented to the public in ten quarto volumes comprising the reports on population, vital statistics, agriculture, and manufactures. At the time of writing over 70,000 copies of these reports have been distributed. The speedy completion of so great a task is especially noteworthy, as the period elapsing between enumeration and the publi-

cation of all the reports of the Twelfth Census is shorter than the like period required for any census since the Seventh, that of 1840, for which about the same length of time was required. The returns for the Seventh Census were comprised in 840 pages, those for the Twelfth Census in more than 10,000 pages.

Two factors have made it possible to complete the work within the limits prescribed by the law—the liberal provisions of the act of Congress which gave the Director wide discretion in the organization and conduct of the office, and the skill, perseverance, and enthusiasm of those immediately in charge of the work. It is likely, however, that the achievement of the Census Office in thus reducing the time between enumeration and publication can be carried still further in the future. A large number of experts have been retained in the permanent office, and with their services available, and the proper advance preparation, it is possible that the period between enumeration and the publication of the results of the Thirteenth Census can be reduced to eighteen months.

FIELD WORK, OFFICE AND CLERICAL WORK.

The United States was divided into 52,872 enumeration districts and 300 supervisors' districts. There were received at the Census Office slightly in excess of 900,000 schedules for population; 500,000 schedules for vital statistics; 5,738,524 schedules for agriculture; and 608,401 schedules for manufactures.

The maximum number of persons employed in connection with the work of the Twelfth Census was 59,373, composed of 3,554 persons in the Census Office at Washington, 2,648 special agents in the field, 300 supervisors, and 52,871 enumerators.

MECHANICAL TABULATION.

Of cards for the electric tabulators, approximately 215,000,000 were used. A maximum of 1,642 punches, 311 electric tabulating machines, and 74 adding machines were required in the work. The number of percentages worked is estimated to have exceeded 2,000,000.

CENSUS PUBLICATIONS.

The total number of different bulletins issued by the Census Office was 250, representing in all 3,910,000 bulletins. One monograph on population, consisting of 15,000 copies, and ten volumes of census reports, aggregating 104,000 copies, were issued. These volumes were divided as follows:

Population, 2 volumes, Volume I being devoted to population by States and Territories, counties, minor civil divisions, cities, towns and villages, sex, color, etc.; Volume II being devoted to school attendance, conjugal condition, illiteracy, occupations, dwellings and families, proprietorship of homes, etc.

Volumes III and IV were devoted to vital statistics, Volume III presenting analysis and ratio tables, and Volume IV presenting statistics of deaths.

Volumes V and VI included agriculture, Volume V being devoted to farms, live stock, etc., and Volume VI to crops and irrigation.

Volumes VII, VIII, IX, and X related to manufactures, Volume

VII presenting the United States by industries, Volume VIII, States and Territories, Volumes IX and X, special reports on selected industries.

The principal difficulty which has attended the enumeration of the people, and the collection of the additional data which the enumerator is required to obtain, has been the inability of the Census Office to employ in all cases satisfactory enumerators. It is impossible to secure the most efficient service when only a brief period of employment can be offered. The work of the supervisors of the different districts was much hampered in consequence of this, and many of the schedules after reaching the Census Office required careful examination in advance of tabulation. This involved much additional expense.

I shall submit to you later for the consideration of Congress, should it meet with your approval, a more effective plan for securing the original information upon which rests the whole structure of statistical work at each census. In the supervision of the field work, relating both to enumerators and to special agents, there is also opportunity for improvement. Before the task of taking the Thirteenth Census begins, a thorough investigation will be made into this branch of census work in order to improve upon the present plan.

THE PERMANENT CENSUS OFFICE.

On the 1st of July of the present year the permanent Census Office was organized in accordance with the Act approved March 6, 1902, and the following employees were appointed by me and approved by the Secretary of the Interior:

Chief clerk, Edward McCauley.
Chief statistician for population, William C. Hunt.
Chief statistician for manufactures, S. N. D. North.
Chief statistician for agriculture, L. G. Powers.
Chief statistician for vital statistics, William A. King.
Disbursing clerk, John W. Langley.

Expert chiefs of division	4	Skilled laborers	12
Clerks, class 3	6	Watchmen	10
Stenographer	1	Messengers	6
Clerks, class 2	10	Assistant messengers	15
Clerks, class 1	272	Unskilled laborers	16
Clerks, $1,000	235	Charwomen	45
Clerks, $900	260		

As soon as practicable after the organization of the permanent Census Office, the work of collecting the statistics for the special reports authorized by section 7 of the Act of March 6, was apportioned among the four chief statisticians, to be taken up from time to time as circumstances will permit. These reports include the following subjects:

* * * statistics relating to special classes, including the insane, feeble-minded, deaf, dumb, and blind; to crime, pauperism, and benevolence, including prisoners, paupers, juvenile delinquents, and inmates of benevolent and reformatory institutions; to social statistics of cities, to public indebtedness, valuation, taxation, and expenditures; to religious bodies; to electric light and power, telephone and telegraph business; to transportation by water, express business and street railways; to mines, mining, quarries and minerals, and the production and value thereof, including gold in divisions of placer and vein, and silver mines, and the number of men employed, the average daily wage, average working time, and aggregate earnings in the various branches and aforesaid divisions of the mining and quarrying industries.

The office has already begun the collection of the data required for the reports on the deaf, dumb, and blind; on wealth, debt, and taxa-

tion; on mines and mining; on transportation by water and express business, and on social statistics of cities. Some of this information will be obtained by schedules and letters of inquiry sent out through the post office, but much of it requires a certain amount of field work.

In connection with social statistics an inquiry relative to the number of "children, and children living," will be taken up with a view to ascertaining the relative fecundity of different nationalities. The office will also during the coming year collect statistics of births and deaths in registration areas as required by section 8 of the Act just cited, and data on irrigation for the crop year 1902, as called for by the joint resolution of Congress approved June 30, 1902.

COTTON GINNING INQUIRY.

Section 9 of the Act of March 6 provides that the Director of the Census shall annually collect the statistics of the cotton production of the country as returned by the ginners; and bulletins giving the results of the same shall be issued weekly, beginning September 1 of each year, and continuing until February 1 following.

After careful investigation it was not found practicable to organize the cotton-ginning inquiry in such a way as to give the amount of cotton ginned as frequently as the law contemplated, as many of the ginneries are so remote from railroads, and in some instances from the post offices, that the chief statistician for manufactures, in charge of this work, decided to perfect an organization that would result at the outset in giving at least three, and possibly four, reports from September until February, with a view to increasing the number of reports as often as circumstances would allow. In the prosecution of this work 624 special agents, practically one to each cotton-growing county, were appointed to visit 28,974 ginneries, which handle nine hundred and ninety-four one-thousandths of the entire cotton crop. There are 217 additional ginneries scattered in outlying counties, which are covered by correspondence direct from the Census Office. The appointment of the special agents above mentioned entails an expenditure of $49,754—practically $50,000—this representing the sum required to make three reports of the cotton crop for 1902. If, as is hoped, the number of reports is increased to four during the next year, the expense would amount to about $75,000.

The large number of special agents necessary to secure this information, as well as the agents required in connection with other special inquiries, will considerably increase the work of the disbursing office, because of the large number of accounts involved, many of which are complicated, requiring careful scrutiny before payment.

Below is given the number of agents for each State:

Alabama	64	Oklahoma	7
Arkansas	67	South Carolina	40
Florida	11	Tennessee	22
Georgia	116	Texas	121
Louisiana	39	Virginia	5
Mississippi	70	Missouri	1
North Carolina	57	Indian Territory	4

When the work of collecting the cotton statistics is thoroughly organized, and those in charge properly instructed in their duties, it is believed that very satisfactory results will be obtained.

PROSECUTIONS.

In my report for the fiscal year ending June 30, 1901, mention was made of the various prosecutions of supervisors, enumerators, special agents and others, for offenses committed against the law. I give below a statement showing the present condition of those cases.

MARYLAND.

St. Mary's County.—Stephen A. Abell, enumerator, and Joseph H. Ching, attorney at law.

The United States attorney at Baltimore reports that all cases in this county have been disposed of, except those against Joseph H. Ching and Stephen A. Abell. The Ching case was argued at the February term of the court of appeals, but was not decided. In the Abell case the jury disagreed, and the United States attorney is awaiting the decision in the Ching case before trying the Abell case again.

In all the other census cases in this State, the United States district attorney makes the report that they have been closed.

PENNSYLVANIA.

D. Smith Talbot, supervisor of second district.—In this case proceedings were begun against Talbot, but upon the payment by him of all his interpreters in full, and upon agreement with the Attorney-General's Office, the case was discontinued.

NEW MEXICO.

Pedro Sanchez, supervisor of the district of New Mexico, and Mariano F. Sena, his clerk.—The United States attorney for the district of New Mexico reports that the case against Sena was tried at the last term of the United States court, September, 1902, and after lasting eight days, resulted in the conviction of Sena. Motion for a new trial, and in arrest of judgment, was made and argued on September 16 and 17, and was overruled. The defendant was thereupon given sentence aggregating four years and four days in the United States penitentiary at Santa Fe. The defendant gave notice of appeal to the Supreme Court and was released in $5,000 bail.

The case against Pedro Sanchez, the supervisor, was not tried at this term. The members of the jury had become so well acquainted with the facts at the trial of Sena, that they would have been disqualified to try the case against Sanchez, and it was impracticable to continue the term of court and issue a special venire.

TENNESSEE.

Selmer, McNairy County.—Henry C. Gooch, enumerator for the eighth enumeration district of the eighth supervisor's district.

Henry C. Gooch, indicted for making false returns, was placed on trial at the November term of the district court at Jackson, Tenn., plead guilty, was sentenced to twelve months in jail, and fined the sum of $200 and costs, $200, both of which amounts were paid.

After the conviction of Gooch, the office received information which indicated that the supervisor in that district (Eighth Tennessee), D. A. McDougal, in conjunction with one John W. Robinson, had conspired with Gooch in the making of these fictitious returns. Complaint was, therefore, made against them, and they were indicted, but upon being brought to trial were acquitted.

MISSISSIPPI.

Third supervisor's district.—Samuel W. Glidden, Paul W. Davidson, William Knight, Scott E. J. Watson, Abraham L. Stringer, and William H. Toler, enumerators in various enumeration districts in the above-mentioned supervisor's district. All these enumerators were indicted on July 3, 1901. Owing to the indisposition of the judge, the cases were continued until the January term. Before they were brought to trial, the United States attorney for that district, A. M. Lea, died, and it was not deemed expedient to try the cases, as he had had special charge of them. It has not been practicable to have them tried since then, but a recent report from the present attorney for the southern district of Mississippi states that the cases are now ready, and will be tried at the term of the United States district court, commencing October 20, proximo.

ARIZONA.

Charles W. Pugh, special agent for the division of agriculture of the Census Office, Phoenix.—The case against Charles W. Pugh, indicted for making out fraudulent vouchers, and for swearing to false expense accounts, came up on a new trial at the spring term of the United States court for the second judicial district of Arizona, and resulted in his conviction and sentence to hard labor for two years in the penitentiary at Yuma, Arizona.

CLERICAL FORCE.

The Census Office dispensed with the services of a large number of clerks on June 30. It was unavoidable, however, that some clerks not to be permanently retained should be carried into the reorganization of the office following June 30, as the final verification, handling of hundreds of pages of proof, and shipments of tons of bound reports, as well as the great amount of detail incident to the close of such an enormous undertaking, made impossible an abrupt transition from temporary to permanent organization. With the completion of most of the work of this character a reduction of the clerical force was made on September 30. As the work of the various divisions of the Census Office in connection with the remaining inquiries takes shape it is likely that economical organization will permit reductions of the clerical force below the estimate upon which the permanent organization of July 1 was based.

COST OF THE TWELFTH CENSUS.

The cost of the temporary work of the Twelfth Census, as shown by the attached statement, was $11,854,817.91, or an average cost per capita of the population of the United States of 15.5 cents. The total cost of field work in connection with the work of the Twelfth Census was $4,358,670.04, or an average cost per capita of 5.7 cents.

Accompanying this report is an estimate of the appropriations for census purposes for the fiscal year ending June 30, 1903; also a statement from the disbursing clerk, showing the cost of producing the four principal reports of the Twelfth Census.

Respectfully submitted.

W. R. MERRIAM, *Director.*

The SECRETARY OF THE INTERIOR.

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REPORT

OF THE

SECRETARY OF AGRICULTURE.

To the President:

The educational work of the Department of Agriculture has grown in effectiveness since my last Annual Report. The opportunities offered to young men to fit themselves for special lines of experimental work under the immediate care of our most experienced scientists are being sought by greater numbers every year. The influence of the Department is extending through cooperation with the scientists of the experiment stations of the several States and Territories and the isles of the sea under our flag. The demands of these institutions for trained men to conduct research into so many fields of inquiry and of private individuals and companies for the best organizing and supervising ability to manage agricultural enterprises encourage students to prepare for doing this work.

The teaching of the science of agriculture and the sciences related to it is receiving more attention in the colleges instituted for this purpose, many of which in the past have neglected their full duty in this regard.

Research by the Department officials into the principles governing the growth of plants and the creation of new species by hybridizing to give varieties from which to select for new purposes has brought gratifying results. We have new fruits and grains of numerous kinds adapted to localities that have been needing them for many years.

We are helping people in many localities to an intelligent knowledge of their soils and of the most profitable uses to which they may be devoted. Results are showing the value of this service. The best sugar lands, rice lands, tobacco lands, truck lands, and lands best adapted to particular fruits, grains, grasses, legumes, and other crops are being discovered as certainly as any other unknown thing is brought to human knowledge for the first time.

Few of the plants of most value to our people are native to the United States. They are products of other countries and have been useful in their localities for long periods of time. Our various soils

and climates are adapted to many things that have not yet been introduced to them. Department explorers are searching the Old World for whatever is valuable there and useful here, with results that are quite encouraging. Our aims are to help toward the production in the States and Territories of everything their soils and climates will permit, and to help our new island possessions to grow whatever products require tropical conditions.

Our growing commerce is accompanied with danger from invasion of animal and plant diseases and parasites calling for vigilance on the part of Department scientists to keep them out and to deal with them when they cross our borders, as they occasionally do.

My last Report showed that the Department was paying $12,600 a year for rent of buildings. It is now paying $21,700, and the amount will increase as the work increases. It would be good business policy to adopt a plan of building adequate to the future needs of the Department, and to authorize the erection of so much of it as would provide for the offices that are now housed in the city wherever room can be had. The sum necessary to provide the rent, at Government rates of interest, would be ample to begin with; besides none of the buildings now in use are fireproof, and we have materials that have accumulated in our laboratories, in addition to a unique library, that could not be replaced if destroyed by fire.

WEATHER BUREAU.

Forecast Warnings.

The past year affords gratifying evidence of the value of forecast warnings of the Weather Bureau in saving life and property. People of other nations express appreciation of our Atlantic weather forecasts. The universal appreciation of this service in giving ample warning of the approach of severe storms or hurricanes or of killing frosts is highly gratifying and affords ample testimony of the assertion I have made on previous occasions that the value of property saved from loss repays to the country many times over the cost of maintaining the Bureau.

Substantial increase was made in the distribution of daily forecasts through the rural free delivery, although efforts in this direction were circumscribed for want of funds for the purchase of necessary supplies. On August 1, 1902, there were in operation about 10,000 rural free-delivery routes, serving approximately 1,000,000 families. For the reason stated, only 105,000 families, served by about 1,000 routes, could be furnished with the forecasts of the Bureau. According to the estimates of the Post Office Department, there will be in operation July 1, 1903, 15,000 routes, serving approximately 1,500,000 families, representing a population of over 7,500,000 people. The distribution

of the daily forecasts of the Bureau should be made coextensive with the rural free delivery. This could be done on the basis of the Post-Office estimates for July 1, 1903, at a cost of about $100,000.

Wireless Telegraphy.

The experiments in space, or wireless, telegraphy were begun January 1, 1900, under the direction of the Chief of the Weather Bureau, and were continued during the past year. While much valuable information has been secured and a fairly satisfactory experimental system has been devised, I am not able to report such progress in the investigation as would justify the Department in dispensing with its coast telegraph lines or with the cables that connect certain islands with the mainland.

Storm Warning Equipment.

As far as funds would permit, the work of extending the equipment of steel towers and high-power lanterns of improved type at important storm warning stations was pushed energetically during the year by the instrument division. In all, 54 towers were distributed to storm warning stations.

The funds available were too limited to permit of the purchase of high-power lanterns and other accessories required by the towers. Moreover, the first six months of the past year have been necessarily consumed in the manufacture, shipment, and installation of the towers. The matter of lanterns and accessories will therefore have to be supplied this year, and while provision for them has already been made, the storm-warning fund will permit of no considerable extension of the work, and we must of necessity confine ourselves to finishing up the work left over from last year. There are now 109 storm-warning and 9 special stations at which the steel towers have been installed. Of these, 48 need lanterns, and they will be issued as soon as delivered by the contractors.

Under the special appropriation by Congress for the purchase of sites and the erection of buildings for the use of the Weather Bureau at certain stations, buildings were erected at the following places, at a total cost of $23,932.53, namely: Atlantic City, N. J.; Hatteras, N. C.; Fort Canby (North Head), Wash.; Port Crescent, Wash.; Tatoosh Island, Wash., and Point Reyes, Cal. Under this appropriation, also, buildings were repaired and improved and supplies provided, at a cost of $17,279.03, at the following places: Bismarck, N. Dak.; Jupiter, Fla.; Kittyhawk, N. C., and Cape Henry, Virginia. The buildings at Port Crescent, Wash., and Jupiter, Fla., are still in course of construction, but will be completed within a few months. In view of the approval of this policy and of the economy to the Government of owning its own buildings, I recommended an additional appropriation of $50,000, which

was duly granted by Congress, for the purchase of sites and the erection of not less than six buildings during the current fiscal year. The places selected for these new buildings are Yellowstone Park, Wyo.; Amarillo, Tex.; Modena, Utah; Key West, Fla.; Sand Key, Fla., and South Farallone Island, California. Owing to the difficulty in providing sites for the buildings at Amarillo and Modena, it will hardly be practicable to erect buildings there before next spring.

The crop service of the Bureau will be dealt with in a special report called for by Congress.

BUREAU OF ANIMAL INDUSTRY.

Inspection Service for Export Animals.

The act of Congress of August 30, 1890, provided for the inspection by the Bureau of Animal Industry of meats for exportation, and this was supplemented on March 3, 1891, by an act providing "for the inspection of live cattle, hogs, and the carcasses and products thereof which are the subjects of interstate commerce, and for other purposes." This law was amended by an act which took effect July 1, 1902, providing for the inspection of dairy products for export. Under these laws important service to the live-stock industry has been performed.

The total number of ante-mortem inspections was 59,158,648, being an increase over the previous year of 2,789,338. The cost of these inspections was 1.08 cents each. The number of post-mortem inspections was 38,903,625. The carcasses condemned numbered 61,980, besides 17,445 parts of carcasses.

The meat-inspection tag or brand was placed upon 19,694,665 quarters, 250,141 pieces, and 3,820 sacks of beef, 7,419,287 carcasses of sheep, 554,016 carcasses of calves, 1,253,083 carcasses of hogs, and 793,471 sacks of pork.

The meat-inspection stamp was affixed to packages of meat products that had received the ordinary inspection as follows: 7,166,490 of beef, 39,229 of mutton, 8 of veal, 15,835,520 of pork, and 638 of horseflesh, a total of 23,041,885.

The number of cars sealed containing inspected meat products for shipment to official abattoirs and other places was 64,730.

The number of certificates of ordinary inspection issued for meat products for export, exclusive of horseflesh, was 32,744. Of beef there were 1,571,305 quarters, 19,728 pieces, 3,845 bags, and 1,582,549 packages, with a weight of 416,990,762 pounds; of mutton there were 85 carcasses and 26,942 packages, weighing 1,145,248 pounds; of pork there were 94,962 carcasses and 658,139 packages, weighing 188,360,011 pounds. These figures show a decrease from the previous year of

35,839,611 pounds of beef and 42,784,927 pounds of pork. There were 11 certificates issued for horseflesh, the export consisting of 638 packages, weighing 170,968 pounds.

The quantity of pork examined microscopically, which was exported, amounted to 33,681,229 pounds. This was a decrease of a little more than 2,000,000 pounds from the previous year, owing to a decreased demand for pork from those countries demanding inspection. The cost of this work per pound was 0.368 cent.

The value of the exports of animals and animal products for the year ended June 30, 1902, amounted to the large sum of $244,733,062. Of this amount, $44,871,684 was the value of the animals, $192,756,608 of the meat and meat products, and $7,104,770 of the dairy products. The total value of the exports of animal products was about $3,000,000 greater than the like exports of the previous year, but there was a decrease of nearly $8,000,000 in the value of cattle exported. This was due to the sharp demand for beef cattle in this country.

Of the 392,884 cattle exported, 295,346 were inspected, tagged, and certified as to health. The others shipped were from ports where inspection is not provided and is made to countries where a Government certificate of inspection is not required. Of sheep, 401,132 were inspected and 212,178 were certified for export; of horses, 13,990 were inspected and 10,975 certified for export. The value of the cattle exported was $29,902,212; of horses $10,048,046; of mules $2,692,298; of sheep $1,940,060.

The inspection of vessels for carrying live stock has been conducted with a view to the best possible service and the most humane treatment of the animals. The percentage of loss in ocean transit of cattle is now reduced to 0.13 for cattle, 0.89 for sheep, and 0.65 for horses.

The number of clearances of vessels carrying live stock was 837, which was considerably less than for the previous year—a condition due to the decreased exports of cattle and horses.

Inspection Service for Import Animals.

There were inspected and admitted from Mexico 65,213 cattle, 3,776 sheep and lambs, and 2,090 goats; also a few asses, horses, mules, and hogs. Through ports on the seacoast, horses not subject to quarantine were imported to the number of 2,283.

One of the most important duties of the Bureau of Animal Industry is to maintain strict quarantine at the ports of the seacoast in order to prevent the introduction of animal plagues. The efficiency of this service has been shown in the past, and it is a service by which the live-stock interests of our country are directly conserved. The live-stock growers demand and receive the most rigid inspection at these ports, for it would be no difficult matter to permit the introduction of diseases which might easily cost the live-stock growers many millions

in direct losses, and at the same time the Government would be under heavy expense in efforts toward their eradication.

We imported from Canada 27,716 cattle, 148,313 sheep, 3,305 horses, and 5,356 hogs which were not subject to quarantine. There were also imported and quarantined 1,214 cattle, 231 sheep, and 33 hogs. Besides these there were quarantined animals of various species which were destined for menageries and zoological parks.

For the purpose of preventing the importation of cattle affected with tuberculosis a veterinarian has been stationed in Great Britain, whose duty it is to test with tuberculin all cattle over six months old which are destined for export to the United States. During the year 1,067 cattle have been so tested, of which 928 were passed and 139 rejected. These cattle were representatives of nine different breeds, those predominating being Hereford, Jersey, and Shorthorn.

Exports of Dairy Products.

Experimental exports of dairy products have been made to Japan, China, Cuba, and Porto Rico. This method of making known the better grades of these products has resulted in somewhat increased sales by merchants in San Francisco and New York and some parties elsewhere; but inadequate and unsuitable transportation facilities, the destructive climates of some of the markets referred to, and other unfavorable conditions prevent any rapid increase in this trade. The results indicate, however, that the markets of Japan may be further cultivated.

Under act of Congress of March 2, 1902, the dairy division of the Bureau inaugurated a system of inspection of dairy products offered for export, affixing stamps to the same, and certifying to the character and quality of the articles. Domestic prices, however, have been so high as to prevent any considerable export of high-grade goods other than condensed milk and cream.

Contagious Diseases.

The work of this Bureau with reference to contagious diseases of animals, which has been prominent from the time of its organization, has been continued. This work at present includes the control of Texas fever, blackleg, sheep scab, and maladie du coït, while scientific investigations are in progress to determine the nature and best methods of treating other important diseases, such as tuberculosis, hog cholera, and anthrax. The records show that 1,688,565 doses of blackleg vaccine were distributed during the year, and the reports of its use reduce the loss of cattle after using it to 0.51 per cent of those vaccinated. If we should eliminate from these reports those cattle which were presumably infected before vaccination, and also those

which probably died because a mistake was made in the operation, the percentage of loss would be reduced to 0.44. These results indicate that the use of this vaccine has saved to the stock raisers many thousands of head of cattle and consequently a very large sum of money.

BUREAU OF PLANT INDUSTRY.

In accordance with the recommendations in my last report, Congress brought within the scope of this Bureau four additional lines of plant work, viz, the Arlington Experimental Farm, the investigations in the production of domestic tea, the work on foreign seed and plant introduction, and the Congressional seed distribution. It has necessarily required much time to perfect this reorganization, but everything in this direction is now practically complete and the nine main branches of the Bureau are being so conducted as to bring forth the very best work. Much of the success of any work in the Department depends, in the first place, upon good men, and, in the second place, upon giving such men responsibilities of a nature that will develop their best efforts. This policy is followed in the Bureau of Plant Industry, and as a result there is an earnest corps of workers, each knowing his duty and performing it with all the energy at his command. Owing to the fact that much of the detailed work connected with the reorganization was completed last year, it has been found practicable the present year to devote considerable attention to the development of new fields, a few of which may be briefly referred to here.

The nature of the work of this Bureau is such that cooperation with the State experiment stations is an important factor, and for this reason very close relationships have been established with station investigators in about thirty States. The work undertaken conjointly with these stations is of the most varied character.

Farm Management.

As the work of reorganizing this Bureau developed, the need was felt for properly coordinating all the varied lines of plant work in such a way that they could be brought directly home to the practical farmer and fruit grower in all parts of the country. To this end, I have approved the establishment within the Bureau of an office of Farm Management, which shall have for its object the bringing together in concrete form of all the facts developed in the Bureau as a whole, sifting the results, and applying them in a practical way where they will do the most good. To enhance the value of this work general studies have been inaugurated in the matter of securing facts regarding the way in which the best paying farms in the country are being managed, and what are the relationships of surrounding conditions, such as proximity to markets, ways of leasing or controlling the lands, soils,

and climate, and the methods of farming followed. With the knowledge thus secured it will be practicable to lay out a working plan for a particular farm in a particular region, the object being in all cases to have such plans serve as object lessons for type regions rather than for individuals. In line with this plan there is now being undertaken in different parts of the South demonstration experiments for the purpose of showing the possibilities of more diversified farming.

With the cooperation of farmers, working plans are being devised whereby the present system of growing only one crop will be changed so as to secure more diversification, thus insuring greater profits and the building up of the fertility of the land. There are many thousands of acres in the South where the same system of farming has been carried on for years and where it would be a great advantage to inaugurate changes which would lead to the building up of the fertility of the soil and give broader opportunities to those handling the same. As a specific example of this work there is now being developed in the South, as object lessons, a system of what will be called "one-man" farms. These are small areas of land in the pine woods region upon which a system of farming is being developed of such a nature as to appeal directly to the class of farmers who must necessarily handle such land. Instead of a single crop, simple systems of rotation are being put into operation, and the question of the proper stock to keep is being considered, all being of such a nature that the work can be handled by one individual. In other regions, where the conditions are different, more elaborate plans are under way whereby considerable tracts of land which have for years been cropped to cotton are being arranged for a regular rotation, introducing stock as an element for the purpose of showing the possibilities of such diversification and its bearing on the welfare of the different communities.

Extension of Fruit Markets Abroad.

With the increasing production of special crops there is felt the urgent need for broader markets. This is particularly the case with perishable products, such as fruits and certain kinds of vegetables. There have lately been undertaken, in a limited way, some investigations having for their purpose the extension of the export trade and the improvement of the methods of handling these products for foreign and domestic use. Several experimental shipments have included summer apples, peaches, fall pears, and sweet potatoes—products in which an export trade is undeveloped; and winter apples, in which there is a large and increasing trade, but in which it is desirable to bring about improvements in the methods of handling and shipping.

The results so far obtained indicate that the first-named products may be landed in European markets in good condition if proper care is exercised in all of the operations from the orchard or field to the

final destinations. A net return has been realized equal to, and in most cases in excess of, domestic values. It is shown also that the net return for a given fruit is largely influenced by the kind of package in which it is forwarded, and by the methods of packing and shipping it.

These preliminary investigations have already encouraged growers to ship some of these fruits in a commercial way and to adopt the suggestions brought out by the Department investigations. The fruit export trade needs careful investigation, both at home and abroad, in order that the methods of the American fruit grower may conform more closely to the foreign practices of handling and distributing our fruits and to the requirements of the foreign consumer.

I wish here to point out the necessity in work of this kind for a thorough and systematic study of the different foreign markets, in order that the American farmer and fruit grower may act intelligently in making shipments. To this end a plan is being devised whereby an experienced man will be sent to one or more of our most promising foreign markets to study all the prevailing conditions, and to secure and handle experimental shipments of fruits and vegetables, noting the condition in which various shipments arrive, the methods of packing which give the most satisfactory results, and looking after numerous other details which can be determined in no other way. Such an agent would also be in a position to secure valuable facts regarding the products with which we are compelled to compete, and would be able to point out methods by means of which we could best meet this competition.

To make this work still more valuable, the Department's agent or agents could do much toward enlightening the general public in such foreign countries in regard to the value of our products for general consumption. There is no reason why many of our fruits and vegetables can not be sent abroad and sold at a price that would place them within the reach of the average consumer, provided he was aware that he could obtain them, and knew something of their value as food. In other words, it seems that the time has come for decisive action in the matter of exploiting abroad such products as have been mentioned; and to accomplish this with the best results trained men, and men of good judgment, will be required. If sufficient funds are available, it is planned to inaugurate this work the forthcoming year in a limited way.

Plant Physiology and Pathology.

The practical utility of thorough scientific investigation of agricultural problems is nowhere better demonstrated than in the Department's work in the broad field of physiology and pathology. While the greatest scientific accuracy is demanded on the one hand in the study

of the normal and abnormal or diseased condition of plants, on the other hand no effort is spared to make the knowledge thus obtained of practical use. Following are some of the results of the work of the past year.

PLANT DISEASES.

PEAR BLIGHT.

This disease, also known as fire blight or apple blight, is the cause of heavy losses annually. It has been especially severe for the past two years in the Southern and Pacific Coast States. The Department several years ago discovered improved methods of treating this disease, and during the past year a large field demonstration of the method was made in Texas in a place where the disease was so severe as to thoroughly test the treatment. This experiment, on a commercial scale, was entirely successful. Four to five thousand bushels of fruit were saved in the treated orchard, while in the untreated adjacent orchard the fruit was destroyed by the disease and the trees greatly injured. Similar demonstrations will be carried out next year in other parts of the United States.

LITTLE PEACH.

Some important discoveries were made during the year in regard to this rapidly spreading disease. In some respects it appears to be almost as serious a trouble as the dreaded peach yellows, and, as in the case of that disease, the Department recommends immediate destruction of the diseased trees. If this is promptly done the disease may be largely stamped out. No resistant stocks have yet been found, though careful search is being made for them.

BITTER ROT OF APPLES.

This disease is one of the worst with which the apple grower has to contend. For the past three years it has destroyed millions of dollars worth of fruit on the trees and millions of dollars worth in the hands of commission men. The method of treating this disease has, in the past, been only partially successful. An agent of the Department has lately discovered that the infection spreads from diseased canker spots on the limbs to the fruit. This discovery will enable us to much more thoroughly control the disease, if not to prevent it entirely. The spraying experiments this year have also been very successful.

BACTERIAL DISEASE OF ENGLISH WALNUTS.

One of the most important industries of southern California is the growing of English walnuts. For several years a disease has been gaining headway in the orchards and has caused great loss. The

Department's experts on the Pacific coast have been studying the trouble and have been especially successful during the past year in improving the methods of combating it. While much still remains to be accomplished, a treatment has been found which will greatly reduce the injury done by the disease.

DECAY OF FOREST AND CONSTRUCTION TIMBER.

Rapid progress has been made during the year in the study conjointly with the Bureau of Forestry of the diseases of forest trees. Special attention has been given to the diseases in the great forest reservations, and practical methods of controlling some of them have been devised.

Recently a serious heart-rot disease of catalpa has appeared in some of the western catalpa plantations. A Department expert has studied this rot fungus, found out what it is, and has devised a method to protect the trees against it in the future. The importance of this is apparent. The planting of catalpa groves is increasing in several of the Western States. The wood is very durable, making good fence posts, telegraph poles, etc.

One of the most important subjects connected with the utilization of forests is increasing the durability of wood when used for construction. A careful study of the various methods of preserving wood was begun the past year by Department experts and much valuable information obtained. The organisms causing decay of fence posts, sills of buildings, railroad ties, telegraph poles, bridge timbers, greenhouse benches, etc., practically all belong to the group of fungi. The Department believes that cheap and effective methods of treating lumber so as to prevent this decay can be found, and considerable progress was made in this direction the past year.

PLANT BREEDING WORK.

DISEASE-RESISTANT CROPS.

The most practical way to fight disease is to use nature's method and get disease-resistant or immune plants. Striking success has been achieved by the Department experts in this line. The development of cotton resistant to wilt disease is now an assured fact and has been taken hold of by the planters on a large scale. Large tracts of land in the Sea Island district of South Carolina which had been abandoned on account of this disease were planted the past year successfully with resistant strains of cotton, and good crops secured. The discovery during the past year of a variety of cowpea —"Little Iron"—resistant to "wilt" and "root-knot" (two of the worst diseases of this important crop in the South) is a matter of great importance to Southern agriculture, where the need of leguminous crops for forage and

soil improvement is especially felt. Thirty bushels of seed of this resistant variety were distributed during the past year.

Satisfactory progress was made during the year in securing varieties of cotton resistant to the Texas root-rot, and some evidence was obtained that varieties may be developed resistant to the dreaded cotton boll weevil.

BETTER UPLAND COTTONS.

One of the greatest needs in improving the cotton industry of the United States has been to secure a long-staple Upland variety which is of good quality and productive.

The long-staple Upland varieties at present existing are all of them rather light producers, and are defective in that the fiber is borne on fuzzy or tufted seed, which makes them difficult to gin.

The aim of the Department's experts has been to secure productive varieties with large bolls, easy to pick, with fine, strong lint from 1¼ to 1¾ inches long, borne on a smooth black seed. Many hybrids were made with this in view and the result has been successful beyond our expectations. Several varieties of the ideal type desired have been produced, having larger bolls, very productive, with long, fine fiber, borne on smooth black seeds. The experiments of the past year show quite conclusively that these varieties can be made permanent.

Egypt and South Africa are waking up to their possibilities in cotton production, and they are already endeavoring to get some of our experts to help them to develop the industry in competition with the United States. The only way we can continue to maintain our supremacy in the future is to develop and grow better and more productive varieties than will be grown by our competitors.

HARDY ORANGES.

The work of developing frost-resistant oranges was started several years ago, and the progress of the work has been reported from time to time. During the past season we have obtained the first fruits of these hybrids. These are intermediate in character between the Florida sweet orange and the hardy trifoliate, and have good, though few, seeds. There is therefore strong probability that from the seeds of these fruits we shall obtain numerous varieties with the qualities desired.

WHEAT BREEDING.

Several of the Russian winter wheats are superior to the American varieties; still there is room for improving on the Russian varieties. As a rule Japanese varieties are early maturing, while the better Russian sorts are late. Hybrids between the Japanese and Russian varieties have already been obtained having the good qualities of the hardy Russian sorts and the early ripening quality of the Japanese. Early

varieties often escape the worst periods of drought and are less likely to be injured by rusts and other fungous and insect pests. Gratifying progress has also been made during the year in breeding rust-resistant varieties and nonshattering sorts.

NITROGEN-GATHERING BACTERIA.

Attention was called in my last report to the importance of nitrogen in the nutrition of plants, and the discovery of a new method of cultivating the bacteria which gather nitrogen in connection with leguminous crops was announced. This method has been perfected during the past year. The reason for the failure of former work in this line, both in this country and Europe, has been determined, and a new, simple, cheap, and thoroughly satisfactory method of growing and distributing the tubercle bacteria for all the important leguminous crops has been perfected. The nitrogen-gathering power of the bacteria grown by our new method is at least five times as great as the nitrogen-gathering power of the ordinary forms found in nature, and the new forms, instead of being restricted to certain legumes, have a much wider range of activity. Field tests on a large scale were started during the year, and advance reports from the cooperating farmers show extremely favorable returns from the use of these organisms.

BOTANICAL INVESTIGATIONS AND EXPERIMENTS.

During the year the botanical investigations of this Bureau were pushed forward with vigor. Some of the more important results accomplished in this field are outlined below:

THE COMMERCIAL GRADING OF GRAIN.

A movement to secure an improvement in methods of inspection and toward greater uniformity in work of inspection departments of the large grain markets is now well begun, as a result of an organization of the chief inspectors of these markets. The interest manifested in this movement by all branches of the grain trade gives reason for believing that there may result from it a system of inspection and grading, maintained by the trade organizations, which shall be honest, efficient, and uniform throughout the country, and which shall insure to the farmer a premium for high quality of product, and to the consumer the quality of grain he demands and pays for. The Department is aiding this movement as much as possible by cooperating with these chief inspectors in working out simple and practicable methods for determining and accurately stating the quality of grain and studying causes and methods of prevention of deterioration of grain in storage and in transit.

AMERICAN AND EUROPEAN RED CLOVER SEED.

The study of the merits of red clover of American as compared with that of European origin has been continued, with the cooperation of a number of agricultural experiment stations in the clover-growing States. From the 1901 plantings the results were practically the same as those of the year before in the testing garden at Washington. The European clovers were not able to stand the hot and dry periods of our summer, but suffered badly from sun scald, and were generally of a much lighter color and less thrifty than those from our own seed. The same facts hold true for the plantings made this year, and it is evident that the European clover, unless it be some from the extreme north, is not adapted to the clover-growing sections of the United States.

NEW REMEDY FOR SHEEP POISONING ON THE STOCK RANGES.

The great stock ranges of the Northwest contain approximately one-third of the sheep in the United States, representing a value of more than $40,000,000. The owners of these sheep suffer an annual loss conservatively estimated at 1 per cent, or $400,000, from poisonous plants. During the past year the Department has continued its investigation of this loss and has succeeded in isolating poisonous principles from the species of camas and from one of the lupines, the two kinds of plants which, next to the loco weeds, cause the greatest percentage of loss in the Northwest. The antidote for poison camas announced by the Department in 1900, viz, drenching with a 1 per cent solution of permanganate of potash and sulphate of aluminum, while effective, can be successfully applied by one man to only a few sheep. Some remedy was demanded which could be more quickly applied when a large number of sheep are poisoned. Our physiological tests of the active principle of poison camas on rabbits and other small animals, subsequently verified with sheep, showed that considerable quantities of the poison passed from the system in the urine. A series of tests was then instituted with drugs that are known to stimulate the action of the kidneys. It has now been demonstrated that a combination of diuretin and caffeine is a satisfactory antidote for this poison; and as it can be given very rapidly by means of a hypodermic syringe, one man can apply the remedy to several hundred sheep in a few hours.

AN IMPORTANT STEP IN HEMP CULTURE.

More than nine-tenths of the hemp produced in the United States is grown in Kentucky, and at present prices it is regarded as second only to tobacco in profit as a farm crop. It yields a good profit there, notwithstanding the fact that practically no labor-saving machinery or

improved methods of handling the crop have been introduced. The hemp is nearly all cut by hand, and after much laborious handling in the process of curing and retting it is broken on a hand brake. In Nebraska, where the industry is being established, a new and important step has been taken in cutting the crop with an ordinary mowing machine. A simple attachment, which bends the stalks over in the direction in which the machine is going, facilitates the cutting. The work is regarded as not much more difficult than that of cutting clover or alfalfa, and one man with a span of ordinary farm horses and a mowing machine that has a 5-foot or a 6-foot cutting bar will mow about 10 acres per day. The cost of cutting hemp in this manner is 50 cents per acre, as compared with $3 to $4 per acre, the rates paid for cutting by hand in Kentucky.

The hemp, after being mowed, is left where it falls until retted, except where it is especially heavy. In that case it is necessary to turn it to secure uniformity in curing and retting. It is then raked up and taken to the mill, where the fiber is extracted by means of a series of fluted rollers and beaters. By these methods hemp tow is produced nearly equal in value to Kentucky rough hemp, and at a total cost, exclusive of rent of land, of about $20 instead of $45 per ton.

THE UTILIZATION OF FLAX STRAW.

Efforts are being made to utilize the fiber contained in the thousands of tons of flax straw produced from the flax raised for seed in the Dakotas and Minnesota. Heretofore most of this straw has been burned to get it out of the way. Now large quantities, after being cut and thrashed in the ordinary manner, are subjected to a breaking process which produces a fiber of excellent quality for paper pulp and also a fair grade of fiber for textile purposes. During the past season satisfactory results have been obtained in the use of North Dakota flax for the manufacture of binding twine.

DEVELOPMENT OF THE SISAL INDUSTRY.

The demand for sisal for the manufacture of binding twine is rapidly increasing, owing largely to the advent of the corn binder. The sisal plant is very exacting in regard to the conditions under which it may be cultivated successfully, and, as the areas having the proper conditions for its growth are comparatively limited, it is of the utmost importance to our American consumers of binding twine, as well as to the fiber producers in our tropical territories, that land suitable for the growth of the sisal plant be utilized so far as possible. These facts have been accentuated by the high prices paid for sisal fiber during the past year. A brief investigation has been made of the sisal industry in the Bahamas, where the conditions are somewhat similar to those in

Porto Rico. Some sisal plants from the Bahamas have been sent for trial to the Porto Rico experiment station at Mayaguez. There seems to be little doubt that the sisal plant can be successfully cultivated in limited areas in Porto Rico, as it is now being cultivated in Santo Domingo. It has been introduced into Hawaii, and the first commercial crop has been harvested there during the past season, the fiber produced finding a ready market at good prices in San Francisco.

THE MANGO AND ALLIGATOR PEAR IN PORTO RICO.

Reports are in preparation advising the extensive planting of superior varieties of mangoes and alligator pears in Porto Rico, to supply the increasing demands of the markets of our Eastern cities. That these fruits are not already as popular in the United States as bananas and oranges is due to the fact that there has been no adequate or regular supply of good quality. Porto Rico offers natural conditions very favorable for their culture, and improved facilities of transportation have simplified the commercial problem. Varieties much superior to those now grown for home use in Porto Rico have been found by representatives of the Department in Guatemala and Mexico.

CULTURE OF THE CENTRAL AMERICAN RUBBER TREE (CASTILLOA).

It is generally supposed that a continuously humid climate is necessary for rubber culture, but in southern Mexico it is obvious that an alternation of distinct wet and dry seasons is favorable to the production of rubber by Castilloa, which will permit a much wider use of this tree in our tropical islands than has appeared possible hitherto. The failure of some of the earlier experiments may be ascribed to planting in situations too uniformly moist. The tree will often grow luxuriantly where it will produce little or no rubber, as many planters have learned to their cost. Rubber is the most important vegetable raw material now imported for manufacture in the United States. The agricultural production of rubber is assured, and several millions of capital from the United States have been invested already in Mexican rubber plantations. The extent, however, to which these and similar enterprises in other countries can be made profitable depends on the solution of many new agricultural problems.

COFFEE SHADE.

The coffee industry of Porto Rico has been injured by the presence of too many shade trees in the plantations, owing to the belief of the planters that heavy shading is necessary. A study of the flourishing coffee industry of Guatemala establishes the facts that coffee of the highest grade can be grown entirely without shade, and that the diminution of shade lessens the ravages of the Central American leaf dis-

ease. The general opinion that the foliage and fruit of the coffee shrub are benefited by shade is erroneous, but the shading of the ground is often a cultural advantage. The nitrogen-collecting powers of leguminous shade trees have also contributed largely to the good effects commonly ascribed to shade, so that the selection of the best leguminous shade trees and soiling crops is of much importance to the coffee planter.

Pomological Investigations.

Fruit growing is the dominant type of agriculture in many parts of the country. Formerly it was an incidental feature of farm management. Now enough of certain kinds are grown for domestic use, and a large export trade has been developed. America grows fruit on an extensive scale in contrast with the small, garden-like areas of Europe. In America fruit is a common article of diet; in European countries it is a luxury. Europeans are beginning to know and value American fruits, but the principal consuming population of Europe is yet unacquainted with them. There are great possibilities in the export trade.

Domestic practices in culture and in methods of handling and marketing fruits are in need of improvement. Greater knowledge concerning the adaptability and distribution of varieties is urgent, and knowledge concerning the adaptability of European fruits to American conditions is desirable. Along these lines the pomological investigations of the Department have been largely proceeding since my last report, and in the office the great mass of scattered information on pomological matters and pomological collections is being systematized for practical use.

THE COLD STORAGE OF FRUITS.

Cold storage, or refrigeration, is a necessary adjunct to the rapidly developing fruit interests of the country. There is little known about the influences which govern the keeping qualities of fruits and vegetables. The Department is investigating this subject, and has strong support from fruit growers, fruit handlers, and warehousemen. The Bureau of Chemistry is cooperating with the Pomological Investigations in studying the chemistry of fruit-ripening processes. The investigation will require several years to secure general conclusions, but already important commercial results have been obtained.

"Scald," or a skin discoloration, is one of the serious storage difficulties with many apples. The cause is yet undetermined, but the investigations indicate that the susceptibility can be largely reduced by allowing the apples to become more highly colored or more mature than usual before picking. Such fruit also keeps equally well in storage. Pears and peaches, though usually stored with difficulty in a temperature of 36°, keep much better in a temperature not above 32°.

Fruit, like Bartlett pears and peaches, that ripens quickly after picking, and which is stored for a short time only, keeps best in open packages in which there is a free circulation of air which quickly reduces the temperature of the fruit; but winter apples, to be held for a long period, keep best in a closed package, which prevents evaporation from the fruit. The Department is investigating the influence of cultural conditions, methods of transportation, and systems of refrigeration, and the results seem likely to clear up many of the present cold-storage difficulties.

VITICULTURAL INVESTIGATIONS.

The viticultural investigations of the Department relate largely to the introduction of European table grapes into the Southern States, to various problems connected with the propagation of European and native grapes, and to the manufactured products of the grape.

In the experimental vineyard of European varieties at Earlton, Fla., established in 1899, several varieties are very promising and seem worthy of commercial planting in a restricted way. In this vineyard, which is on sandy soil, the distinct superiority of stocks of the Rupestris type over Riparia stocks has been demonstrated for the Vinifera varieties.

In North Carolina the experimental vineyard of similar varieties shows several promising varieties, though the results are less encouraging than in Florida.

An extensive experiment in bench and field grafting of Vinifera grapes has been begun to determine the relative congeniality of different varieties to different resistant stocks and the behavior of the grafted vines on various kinds of soils. This work is planned to have distinct bearing on the grape industry of the South and of the Pacific coast.

An investigation of the influence of dipping grape cuttings in water at different temperatures and for varying lengths of time upon their growth, and to destroy the Phylloxera, has demonstrated that the limit of safety was reached in a temperature of 50° C. with a five-minute immersion.

Investigations are also in progress relating to stocks that are resistant to the Phylloxera, and which are adapted to the grape growing of the Pacific coast.

The Department is also making a careful study of the methods of manufacturing unfermented grape juice and of its importance as a commercial product.

FRUIT DISTRICT SURVEY.

The adaptability of varieties to the conditions under which they are grown is a matter of fundamental importance, and no question is more

often asked by a prospective fruit grower than "What varieties shall I plant?" The object of this survey is to determine the varieties of the different fruits best suited to the conditions where they are to be grown and to study the influence of conditions upon the behavior of varieties.

The funds available for this work have made it possible only to survey some of the more important sections of the Piedmont region of Virginia, the Blue Ridge section of Maryland, and a portion of a similar area as it extends into Pennsylvania. Much important data regarding the behavior of the numerous varieties of fruits already grown there have been accumulated. This survey is being extended to other fruit-growing sections as rapidly as possible.

In connection with this work an extensive cooperative system of phenological observations has been established. It is expected that these observations, extended over a period of several years, will throw light on several perplexing questions regarding the behavior of varieties and their adaptability to the various fruit-growing regions.

SPECIAL PROBLEMS IN POMOLOGY.

Investigations are well under way with pomological problems connected with the pecan industry, the peach industry, and the citron of commerce industry of the Pacific coast. On all these lines there is a large demand for reliable information, and the Department is preparing to issue publications covering them.

Grass and Forage Plant Investigations.

The value of the hay crop in this country exceeds that of any other crop except corn. When we add the yield of pasture lands to that of hay fields, the total exceeds the value of even the corn crop. Investigations of grasses and forage crops are therefore of vital importance to American agriculture. The investigations in this line during the past year have shown that the maintenance of soil fertility is intimately associated with the production of forage crops and their proper utilization on the farm. Those States which are noted for the production of such crops not only have maintained the original fertility of the soil, but they spend for commercial fertilizers less than 1 per cent of the annual value of their crops, while those States which pay least attention to forage crops have impoverished the soil and spend annually for fertilizers from 5 to 9 per cent of the total value of their crops.

LEGUMINOUS FORAGE CROPS.

The influence of leguminous forage crops in restoring fertility to the soil is well known. No system of agriculture can be indefinitely maintained without some crops of this character. From the earliest

times clover has been the foundation of agriculture in our Northern States. But with each succeeding year the difficulty of securing a stand for this important crop increases, and there is a pressing demand for a suitable substitute for clover. The Department has undertaken to meet this demand by the introduction of alfalfa in the clover region. The success which has thus far attended our efforts in this direction is most encouraging. It has been demonstrated that alfalfa can be successfully grown in nearly all the Northern States. This work promises so much that we desire to push it vigorously during the coming year.

In our Southern States the cowpea is deservedly popular as a leguminous crop, both on account of its feeding value and its beneficial effect on the soil. But on account of its habit of growth this plant is difficult to harvest, either for hay or for seed. The Department has collected all known varieties of cowpeas in order to study the characteristics of each. We have undertaken to produce varieties that shall be free from the objectionable characteristics of those now grown, and have reason to hope for complete success. Other leguminous forage crops are being tested, both at Arlington Farm and at various places in the several States. Among these is a new and promising variety of alfalfa from South America that resists the rust which frequently attacks the common form, and which grows taller than the latter. As soon as seed of this variety can be obtained in quantity it will be distributed in those sections where there is most need of it.

GRASS GARDENS.

The grass garden on the Department grounds has been improved in a number of ways, and contains a large number of valuable grasses, legumes, etc. During the year this garden has been visited by a large number of people interested in agriculture, who have thus had an opportunity of observing many forage plants new to them. The public has shown a lively interest in this valuable display, which includes several valuable lawn grasses and ornamentals. An extensive grass garden was also maintained by this Department on the grounds of the Exposition at Charleston, S. C., and the correspondence received from Southern farmers relating to this garden shows that it was considered one of the most valuable features of our exhibit. It has been the means of introducing several new forage plants in the Southern States.

RANGE IMPROVEMENT.

The investigations in this branch of work have shown that the depleted Western ranges may be brought back to their original productiveness by proper methods of range management. Heretofore this work has been confined to small experimental areas. We have now progressed to the point where it becomes necessary to cooperate with

stockmen in the actual management of selected areas of range lands. To do this it is necessary that we control the grazing of stock on such areas. To this end I repeat my former recommendation, namely, that action be taken by Congress giving you, Mr. President, authority to secure for the experimental needs of this Department such tracts of public range lands as may be necessary for the best interests of the work.

SOIL AND SAND BINDERS.

Along the Atlantic and Pacific coasts and the shores of the Great Lakes, as well as in many inland places, there are to be found extensive areas of drifting sand. These shifting dunes of sand frequently destroy farms, cover up farm buildings, and interfere with the operation of railroads. The Department is engaged in investigations having in view the covering of these sand dunes with vegetation to prevent drifting. Several species of plants have been found that can be propagated rapidly in this drifting sand. Several successful plantations of these have been made, and others are now being made. Some of the leading sand-binding grasses are grown on an artificial sand dune in the grass garden on the Department grounds, forming a very instructive feature of our outdoor exhibit. From the results thus far secured in other countries we have reason to hope that we may finally bring these barren and dangerous sands into useful grass and wood lands.

CROPPING SYSTEM.

This Department is collecting data concerning the systems of farm crops used in various parts of the country, in order to study the relation of such systems to the maintenance of soil fertility. The data already at hand show that in those sections where a one-crop system prevails the soil rapidly loses fertility, and there is a large and increasing demand for commercial fertilizers, while in those sections where a system of rotation of crops prevails, particularly a rotation including forage crops to be fed on the farm, the soil continually improves, and commercial fertilizers are not used except on small areas for special crops. I believe that this Department can do much for agriculture in this country by devising suitable cropping systems for those sections where present systems are unsatisfactory, and giving the farmer information about the best methods of utilizing his crops.

HORTICULTURE.

EXPERIMENTAL GARDENS AND GROUNDS.

As pointed out in my last report, the Experimental Gardens and Grounds under the reorganization have been made exceedingly useful as an aid to other branches of work carried on by the Bureau of Plant Indus-

try and other Bureaus in the Department. With a view to still further increasing the value and efficacy of this work, investigations have been inaugurated having for their object the securing of information on crops which are cultivated more or less intensively in various parts of the United States. Special attention has been given to the cultivation of plants under glass and the elucidation of problems having a bearing on this important industry. The Experimental Garden is one of the oldest branches of the Department, and since this work was inaugurated a great many valuable plants have been accumulated. These have not been made as available for study as they might be, and for this reason plans have been put in operation whereby the various collections on the grounds and in the greenhouses will be brought together, properly labeled, and made useful for visitors and others who wish to study them.

A special feature of this work will be the development on the grounds of gardens of economic plants. It is planned to bring together a considerable number of the various native plants of the Eastern United States for the purpose of showing the possibilities of utilizing these plants in the simple decoration of the home and of schools. It is also planned to develop various collections of economic plants, such as drug and medicinal plants, and plants used in the arts and for numerous other purposes. As a further line of work for this branch of the Department, plans have been put in operation for securing and distributing seedling trees which have more or less historic interest. There are many historic trees in the vicinity of Washington and in the country at large, and it is believed that much good can be done toward arousing an interest in tree planting by distributing a limited number of these trees under proper direction. The seedlings, when grown, will be sent to schools in various parts of the country, and there will accompany each tree a concise statement setting forth the historic events connected with the tree itself and the growing of the seedling. The primary object is to keep alive patriotism and to encourage a love for nature and a love for home and the habit of tree planting.

THE ARLINGTON FARM.

The work on the Arlington Farm during the past year has been greatly increased. A considerable portion of the land has been drained, and during the year a thorough survey was made and the ground was platted, so that it was found practicable to begin the real work of experimentation. This farm, previous to its acquisition by the Department, was used for many years as a grazing area for horses and mules not in service, belonging to the War Department. In general it was fairly well covered with blue-grass sod, but many shrubs and trees had grown up to interfere with cultivation. The trees and shrubs were removed, the soil plowed and put into condition for the

reception of cowpeas or buckwheat, according to the condition of the area, and the work was completed. About 40 acres of the land which in 1901 were planted in cowpeas were this year devoted to plat work. The plats are uniformly one-twentieth of an acre in area. Some 4 acres of such plats are devoted to nursery purposes, including seedling forest trees, while the rest is given over to experiments with vegetables, plant-breeding experiments, experiments conducted by the Pathologist and Physiologist, Pomologist, etc. In surveying and platting the land the location of barns and future buildings was determined upon, and a barn suitable for important needs is being constructed at the present time. With the facilities at hand it will be practicable next season to inaugurate quite extensive work.

Tea Growing in the United States.

The work on the growing of American tea was continued during the year at Pinehurst, Summerville, S. C., in cooperation with Dr. Charles U. Shepard. Dr. Shepard now has at his place about 100 acres in tea gardens, and his factory is well equipped for carrying on work on a commercial scale and for accurate scientific experiments. With a view to bringing about a clear understanding as to the relationship of the Department to this work, a proper form of agreement has been prepared and entered into by the Department on the one hand and Dr. Shepard on the other. By the terms of this agreement the Department is able to secure the use of the extensive plant of Dr. Shepard for experimental purposes, and will profit by the results from the extensive work that he is carrying on. During the year careful attention has been given to methods of reducing the cost of the production of tea with very satisfactory results. Improved factory methods have also been put into operation, with the result that better grades of tea are now being turned out than ever before. To aid in this work, Dr. Shepard has secured during the year the assistance of an expert tea taster in New York, who has sampled his various grades and thus made it practicable to determine not only the kinds of teas which have proved of the highest quality, but the effects of different methods of picking and handling.

As pointed out in my last report, the yield of tea in Dr. Shepard's gardens last year was about 4,500 pounds, and this year there will be about 9,000 pounds of marketable tea. Some of the gardens have proved very prolific and profitable, while others have given very light yield of tea, having poor quality. All these facts, of course, will enable the Department to profit in further exploiting the work. With a view to increasing the interest in this crop, a tea farm will be established in Texas if suitable land and cooperation can be secured. Agents of the Department are now on the ground looking into the question, and the outlook is very favorable. Whether or not tea

growing in this country can be made a commercial success will depend, in large measure, upon most rigid attention to the details connected with the field and factory work. It is not expected that any large profits will be made, but it is believed that by proper and judicious management sufficient profit will result to encourage the planting of the crop in many parts of the South, especially where there is cheap labor available. Proper labor, of course, constitutes one of the most important factors in this matter; but, fortunately, there are many places in the South where hands now idle might be turned to some use in this direction.

Congressional Seed Distribution.

In my last report attention was called to the fact that the distribution of seeds was required by an act very specific in its terms, and that it was my wish to carry out the will of Congress in a way that would result in the most good to the country. During the year rapid advancement has been made in the matter of improving all of this work, and it is gratifying to announce that under the system which is being put into operation little or no friction has resulted. The Congressional distribution for 1901–2 was the largest in the history of the Department, yet notwithstanding this fact all the seed went out on time. With a view to increasing the value of the work, particular attention was given to the distribution of forage-crop seed, cotton seed, tobacco seed, and seed of other special crops. In each case an expert was put in charge of a particular crop and was responsible for securing new, rare, or little known varieties, and the distribution of each variety in a locality where it seemed likely that benefit would result from its use. Very encouraging reports have been received as a result of this work, especially in the matter of cotton distribution, where a special effort was put forth to secure new varieties or varieties which were known to have value locally, but which had not been generally distributed. With a view to still further increasing the efficiency of the seed work, a number of new plans have been put into operation during the year.

The method of securing seed through a contractor has been abandoned, as it was never satisfactory, offering opportunity for inferior service, and, besides, working a hardship on the seed trade of the country—something the Department has no desire to continue. Under the new system the Department secures its own seed in the open market, and contracts only for the purely mechanical features of the work, such as the packeting of the seed and the mailing of the same. With a view to making this work of more value to the country and encouraging the legitimate seed trade, plans have been inaugurated whereby the Department will gradually substitute new or little-known seeds, such as specialties or novelties, for the more common sorts here-

tofore distributed. Seedsmen are now cooperating with the Department in furnishing these specialties and novelties, and the Department will distribute them possibly only one year, dropping them then and allowing the demand, if demand there be, to be met by the regular trade. Particular attention will be given in all this work to the distribution of special crops, such as forage, tobacco, cotton, sugar beet, cereals, etc. In the handling of these special seeds and plants the work of the plant-breeding laboratories will be utilized, and the requirements of different sections of the country will receive careful consideration, so that crops will be selected to meet the needs and requirements of the districts into which they may be sent.

Foreign Seed and Plant Introduction.

During the year the Department pushed forward the lines of work on introduction of foreign seeds and plants as rapidly as the means at hand would permit. In carrying on this work the various branches of the Bureau have contributed to the expert knowledge to be applied to the best handling of the crops.

Agents have been sent to the Orient with a view to securing information on crops particularly adapted to the South. Rice has received special attention, and in addition the question of forage crops suitable for this region was also kept constantly in mind. An agent visited India, China, and Japan, and secured many valuable introductions in the way of seeds and plants which will be useful in building up new industries. This work has been greatly aided by the generosity of Hon. Barbour Lathrop, who, at his own expense, has carried on extensive agricultural explorations during the year, assisted by Mr. David G. Fairchild, an agricultural explorer of this Department. Mr. Lathrop has secured and forwarded to this country a number of valuable plants, which are being handled by the Department's agents and by private individuals, to whom such plants have been sent direct by Mr. Lathrop. Particular attention was given to the introduction of the bamboo, which it is believed will prove a promising crop in sections of the West and South, where this plant is hardy.

In former reports attention was called to the efforts of the Department in establishing date growing as an industry in this country. Considerable advance has been made in this direction during the past year, a large shipment of young date trees having been received from Mr. Lathrop. They were planted in the large cooperative date orchard established by the Department in Arizona. This orchard now comprises about 11 acres and contains 580 imported trees, besides 80 native seedlings. Another important introduction during the year through Mr. Lathrop's efforts is the Egyptian or berseem clover, which is very valuable for certain portions of the country as a soil reclaimer and enricher and as a forage plant. The continued fertility

of portions of the Nile Valley which are annually overflowed is largely due to the nitrogen-gathering properties of this plant.

Agents have also been sent to Algeria, Egypt, and other parts of Africa for the purpose of studying the irrigated crops of these regions, and also the crops which are particularly adapted to alkali soils. These agents have secured many valuable facts which will aid the Department in its extensive studies of the plants of our own arid and semiarid regions. With a view to securing additional forage crops and cereals from Russia and adjacent countries, an agent was sent to those regions in the early part of the year. The securing of forage crops, particularly the various kinds of Turkestan alfalfa, was the primary object of this visit; although some attention was given to obtaining varieties of fruits and cereals adapted to the dry regions of the Northwest.

MACARONI WHEAT.

The importance of the introduction and establishment of macaroni wheat in the United States, to which attention was directed in my last report, has been amply demonstrated by the results of the past year. We estimate that about 2,000,000 bushels have been harvested this season, but this will not meet the demand for it coming from all quarters. New mills are being built to grind it and old mills have been modified in order to handle it, and it now has its definite grade like other wheats in the Northwestern markets. It yields from one-third to one-half more than the other standard wheats in the same locality throughout the Great Plains region. Furthermore, it extends the wheat area much farther westward over districts of great extent, where it was not considered possible to grow wheat before, owing to light rainfall. The macaroni made from this wheat is pronounced by experts to be equal, if not superior, to the imported product, so that the success of this industry is assured.

INTRODUCTION OF WINTER WHEAT AND OTHER CROPS.

The results of the past year indicate that the winter wheats introduced and tested by the Department are likely to prove of as great, if not greater, value than the macaroni wheats. Four or five varieties obtained from east and south Russia are much more hardy than any varieties now grown in this country, and will extend the winter wheat area several hundred miles north and some distance farther west than at present. This means an increase of 5 to 10 bushels per acre over the standard spring wheats now grown in the same localities.

Quite valuable results have also been secured in the introduction of Swedish oats, proso or broom-corn millet, malakhof, sugar corn, and a number of other Russian crops. There has been rapid advancement during the year in the rice-growing industry, largely through the efforts of the Department in the introduction of new forms and the

obtaining of information from abroad bearing on the methods of handling the crop and preparing it for market. Particular improvement has been made in the rice-growing regions of Texas and Louisiana, where the work of the Department has yielded the most striking results. In former reports attention has been called to the great value of this work to the two States named, and such has been its development that at the present time the rice production in this country about equals the demand.

The Jordan almond is another successful introduction during the year. There are about 5,500,000 pounds of almonds grown in California, but many pounds are still imported from Spain for the reason that the California nut is not equal to the best imported kind, known as the Jordan. During the year buds and scions of this variety have been secured and sent to California, and it is certain that in a few years California-grown Jordan almonds will be on the market.

A special effort was put forth during the year to secure alkali-resistant crops, particularly alfalfas and cottons. Seed of the Turkestan alfalfa has been obtained and is now on the way to this country, and will be distributed, under proper direction, during the year. Seed, also, of a number of alkali-resistant cottons has been obtained in Algeria and Egypt, and steps are being taken to place these seeds where the conditions are such as to make their success a valuable adjunct to certain parts of our Western country.

PLANS FOR TESTING GARDENS.

As a means of further systematizing all of the work connected with the distribution of seeds and plants by the Department, and the introduction of the same from foreign countries, plans are being perfected for establishing in a number of places in the country testing gardens, which will enable the Department to work out a number of important problems connected with these investigations. It has been found by experience that the promiscuous dissemination of seeds, many of which are often of great value, does not give in all cases satisfactory results. It is highly important in all such cases to be able to determine definitely where such plants and seeds are likely to prove most successful. After this is known it is still necessary to convince farmers or fruit growers of the feasibility of growing the particular crop. Even then the work is not finished, for although the crop may be grown readily, the question of a market must be considered.

Suitable testing gardens, conducted possibly in cooperation with some of the experiment stations, but under the direct control of the Department, will be of great value in further continuation of this work. Such gardens may be used for the purpose of standardizing the various varieties of vegetables now being offered by the seedsmen throughout the country. There is at present a great deal of confusion regarding varieties of vegetables, and while the work of breeding is

growing apace it will be well worth while to fix the types of varieties and disseminate better strains of standard sorts. If the Department would set a high standard in this matter it would probably result in a great diminution of the indiscriminate renaming of varieties and in the introduction of such as are new only in some slight respect. It is obvious that work of this kind to be of the greatest value must be conducted under very careful conditions and be carried on in a sufficient number of regions to get results which will be of real value.

BUREAU OF FORESTRY.

On July 1, 1901, the Division of Forestry became a bureau. It has therefore completed its first year under the new form of organization. The results obtained have amply justified the change and the increased appropriation which accompanied it. Interest in forestry and a perception of its possibilities as the means of making productive a great national resource have developed so swiftly in the United States that the discrepancy between the capacity for public service of this branch of the Department of Agriculture and its opportunities was never so great as it is now.

During the past year the Bureau of Forestry has notably increased the store of knowledge on which all forestry depends, and has made large gains in introducing practical management of forests, both of public and private ownership. Its field work has engaged 162 men, and has been carried on in 42 States and Territories.

The forest work of the Department of Agriculture has hitherto proceeded as rapidly as the scanty means of forest education would supply men, and its growth has been normal and safe. In view of the greater product of the forest schools and the immensely growing demand upon its services it might hereafter safely increase its rate of progress. To check the growth of the Bureau of Forestry at this time will likewise check the spread of public sentiment in favor of forest protection. It will dull the desire of forest owners, applicants to the Bureau for assistance, some of whom have already waited for their turn until their patience is almost exhausted. It will dampen the willingness of young men of the right stamp to make forestry their profession, because they look forward with practical unanimity to the Government service. A single frost which would pass over a mature tree without effect will often injure and retard for years the growth of a healthy seedling. I conceive the Bureau of Forestry to be in precisely that situation.

Organization of the Bureau.

The work of the Bureau of Forestry is organized along four lines: Forest management, forest investigation, records, and tree planting.

Forest Management.

The Bureau of Forestry exists to secure the best management of the forests of the United States in the interests of the whole people. This involves not only the development of a science of American forestry, but also the general introduction of conservative methods in handling forests of private ownership.

The Division of Forestry offered in October, 1898, to give advice and assistance to forest owners desirous of introducing conservative management. The response to this offer was immediate, and has grown steadily in volume. During the last fiscal year 37 applications were received, asking advice for the management of nearly 2,000,000 acres of forest lands. Altogether the advice of the Bureau has been asked, since its offer in October, 1898, on 4,709,124 acres.

The working plans of the past year are in the nature of solutions of seven typical and widely differing forest problems. These problems are:

Management of a Southern Appalachian forest, containing a great variety of trees, mainly hardwoods, in a somewhat inaccessible region, where only the most valuable species can be lumbered at a profit and where special measures are necessary to assist their reproduction and to prevent the progressive deterioration of the forest as the best woods are cut out. Fire protection, at a cost which is not prohibitive from a business standpoint, forms one of the important questions involved. The tract studied has an area of 110,000 acres, and lies in Polk and Monroe counties, Tenn.

Management, in conjunction with coal mining, of a tract of mixed softwoods and hardwoods, containing 50,000 acres, in Scott, Campbell, and Anderson counties, Tenn. Silviculture, contract lumbering, transportation, and protection from fire are the more important points studied.

Management of 60,000 acres in Beaufort and Hampton counties, S. C., on which the most important commercial species is Longleaf Pine. Fire, lumbering, and turpentine orcharding have seriously injured the forest, and the consideration of first importance is a method of treatment which shall restore it to full productiveness while yielding a fair return on the value of the land. The conditions are typical of much of the Southern Pine Belt.

Management of 10,000 acres of fine hardwoods on Grand Island, Michigan, with an accessible market, a high price obtainable for the product, and consequently an exceptionally good opportunity for paying forestry.

Management of 15,000 acres in Herkimer County, N. Y., composed equally of cut-over and virgin forest. The most important timber tree is here, as generally in the Adirondack region, Red Spruce,

and the chief object of the working plan was to provide for the reproduction of this species and to suggest such changes in present methods of lumbering as will give immediate and good returns from the forest and at the same time will insure a profitable future yield.

A somewhat similar problem, but in a different locality, was that presented by a tract of 275,000 acres in northwestern Maine. Field work was completed during the year on 150,000 acres of this tract, timbered mainly with Red Spruce and Balsam, of which the former, as commercially the more valuable of the two, should be favored as the source of subsequent crops.

The last tract on which field work was completed during the year was one of 15,000 acres near Arden, N. Y. The forest consists of second-growth hardwood and is for the most part in poor condition. The working plan advises a system of thinnings by which the condition of the forest will be improved and which will at the same time yield good returns in firewood.

The total forest area now under management in accordance with working plans prepared by the Bureau of Forestry is 372,463 acres. Material for a number of new working plans is now being gathered. Especially notable is the plan in preparation for a tract in southeastern Texas which comprises an area of 1,250,000 acres and is the largest private holding of timber land in the United States.

By request of the Secretary of the Interior for advice in the management of the national forest reserves, which now include 60,162,525 acres, the Bureau of Forestry became the official adviser for these reserves in matters of forest policy. The making of working plans for the reserves has continued during the year. Field studies have been carried on in the Prescott, the Priest River, and the Big Horn reserves, and a preliminary examination was made of the San Francisco Mountains Reserve. A similar request from the Secretary of War, made during the last fiscal year, has placed the Bureau in the same relation toward the military wood and timber reservations, eight in number, with an area of 117,468 acres. Of these, that at West Point, containing 2,000 acres, has been examined, and a working plan for its management will soon be prepared.

In accordance with the request of the Secretary of the Interior, an examination has been made of the forest lands within the Lac Court d'Oreilles, the Bad River, and the Menominee Indian reservations, in Wisconsin, in order to recommend measures for the conservative lumbering of the timber they contain.

Forest Investigation.

The studies of commercial trees made during the past year include White Pine, Red Pine, White Oak, Scarlet Oak, Red Oak, and Aspen,

in Michigan: Sugar Pine in California; Balsam in Maine; White Oak and Chestnut Oak in Tennessee, Kentucky, and Missouri; Western Yellow Pine in Arizona, and Lodgepole Pine in Wyoming and Montana. Previous studies of the Longleaf and Loblolly pines, of the Sierra Big Tree of California, and of the Bristle-cone Fir in southern California were completed and reports prepared on Western Hemlock and the Pacific Coast Redwood.

Studies of the growth and possibilities of New England second-growth hardwoods were carried on, and an investigation was begun of the distribution and the conditions necessary to the best development of the trees comprising the eastern Missouri and Arkansas swamp forests.

Studies of the forest and its industrial relations were made in the States of Michigan, Kentucky, Ohio, Texas, New Mexico, Arizona, South Dakota, Wyoming, Montana, California, and Iowa. Some of the questions involved were the present and future timber supply, forest fires, and the relation of the forest to stream flow, irrigation, and grazing.

Descriptive studies were conducted in cooperation with the United States Geological Survey of about 3,000,000 acres of the Sierra Forest Reserve and of the region in the Southern Appalachians, within which it is proposed to establish a national forest reserve.

In cooperation with the Bureau of Chemistry, investigations have been undertaken of native tan extracts and their comparative values in tanning, of Philippine gum products, and of possible additions to the present list of native woods suitable for the production of paper pulp.

A cooperative study of insects which injure the forest was begun with the Division of Entomology.

It is highly gratifying that the efforts which the Bureau has been making to discover a less injurious method of turpentine orcharding than that hitherto employed, and to which I made reference in my last report, have been successful, and that the way is apparently open for the general introduction of an improved method which will be of notable value in maintaining the source of the turpentine industry.

Tests of the durability of treated and untreated construction timber and railroad ties have been continued, in cooperation with the Bureau of Plant Industry. The enthusiastic assistance which has been received from railroad companies has demonstrated their appreciation of this valuable work.

In cooperation with the Bureau of Chemistry, and as the result of a widespread and urgent demand, the Bureau of Forestry has taken up the series of tests to determine the strength of the principal merchantable timbers of the United States, which were discontinued in 1896.

Records.

The enlargement of the Bureau's quarters, which took place during the year, made possible for the first time the proper equipment of a library and the transference thither of the entire collection of forest literature from the Department library. This has given the Bureau a large, easily accessible working and reference library. The photographic collection now numbers over 6,000 prints, and a well-equipped photographic laboratory has been installed.

Tree Planting.

The work of the Bureau in tree planting for the last year has been chiefly notable in the conspicuous progress made in extending cooperative planting, in the creation of the first reserves for forest planting on Government lands in a region that is now unproductive of timber, and in the successful initiation of measures to control, by means of planted forests, the shifting sand dunes on both the Atlantic and the Pacific coasts.

In tree planting as in forest management the Bureau has sought, as the only method by which the desired end could be attained on a broad scale, to enlist the interest of the private landowner. Circular No. 22, issued July 8, 1899, offers cooperation in the work of planting forests similar to that previously made for forest management. Up to the close of the last fiscal year 262 applications for assistance had been received, nearly 200,000 acres had been examined, and 224 planting plans, covering about 6,400 acres, had been made. Of these, 51 plans for about 3,400 acres were made during the past fiscal year, and 83,597 acres were examined.

These figures, however, by no means cover the actual accomplishment of the Bureau in introducing forest plantations on private lands. The plans made are for 172 localities, in 29 States and Territories. Not only does the example set by each plantation made affect the whole neighborhood, but there has also been in many cases a public agitation of the question of tree planting, with local meetings addressed by the agents of the Bureau. Extensive planting on other land than that for which plans were made has frequently followed. Plantations of this kind will be of very considerable economic value in many States of the Middle West by furnishing local supplies of firewood, fencing, telegraph poles, and railroad ties, besides providing wind-breaks and other protection.

The success of economic tree planting in many scantily timbered or treeless regions of the Middle West is now assured. This means enhanced prosperity for these regions. A local timber supply is a matter of decided importance to the farmer, who needs cheap fuel and fencing. As a result of the Bureau's work, thriving plantations now

exist in the Dakotas, Nebraska, Kansas, and Oklahoma, as well as in the older States of Iowa, Illinois, and Indiana.

In New England particular attention has been given to the possibility of profitably planting cheap land with white pine. The supply of this highly useful timber tree has been greatly diminished in the Eastern States. If it can be brought back as a paying forest tree under management, the benefit will be one in which both the landowner and the timber-consuming public will share. So encouraging has been the outcome of the examination of this question by the Bureau that many owners of denuded lands are restocking them with white pine.

The Proposed Appalachian Forest Reserve.

In my report on the Forests and Forest Conditions of the Southern Appalachian Mountain region, which has been printed along with your message to Congress on this subject, of December 19, 1901, I discussed briefly the rapid rate at which the forests on these mountain slopes were being removed, and the extent to which the resulting floods were destroying agricultural lands and other property along the streams rising in that region. In that report I stated that the damages resulting from these floods during the year (1901) "approximated $10,000,000, a sum sufficient to purchase the entire area recommended for the proposed reserve."

Subsequent examinations have shown that during the few months following the date of that report the flood damages on these streams, extending across eight different States, aggregated $8,000,000, making a total of $18,000,000 during the twelve months ending in April, 1902. These examinations also show, as additional results of the deforestation of these mountain slopes, (1) that the water powers along these streams, which have an aggregate annual value of $20,000,000 as a basis for manufacturing enterprises, are being gradually but certainly destroyed through the increasing irregularity in the flow of the streams; (2) that the soils which are being washed down from these mountain slopes are rendering annually less navigable the Ohio, the Tennessee, the Mississippi, and other rivers of these Southeastern States; and (3) that the rate of land erosion on these mountain slopes from which the forest cover has been removed is now as great in a single year as it was during ten centuries while these slopes were covered with primeval forests.

A bill providing for the establishment of the forest reserve recommended in my report is now pending before Congress. With an increased realization of the importance of this measure I reproduce here the concluding paragraph of that report:

> The preservation of the forests, of the streams, and of the agricultural interests here described can be successfully accomplished only by the purchase and creation of a national forest reserve. The States of the southern Appalachian region own little or no land, and their revenues are inadequate to carry out this plan. Federal action is obviously necessary, is fully justified by reasons of public necessity, and may be expected to have most fortunate results.

BUREAU OF SOILS.

The organization and work of the Bureau of Soils has been essentially along the same lines as heretofore, with the addition of an important line of work in the division of soil management. Attention has been given, as heretofore, to the administrative work, the soil survey, the tobacco investigations, drainage investigations, and the laboratories maintained in support of these several lines of field work. The wisdom of Congressional action in converting the Division into a Bureau and increasing the appropriation has been shown in the amount of work done and in the appreciation of this work from various sources. The soil survey, particularly, has been greatly extended, and the division of soil management, although merely started during the year, gives promise of some more important results than have been achieved in soil investigations for some time past. Prof. Franklin H. King, formerly professor of agricultural physics at the University of Wisconsin, has taken charge of this line of field work. He is considered peculiarly fitted for this place, and his appointment has been very generally commended.

During the year Mr. M. L. Floyd, the tobacco expert who had done so much to make successful the tobacco investigations of the Bureau, severed his connection with the Department to become general manager of a tobacco corporation organized to grow the shaded Sumatra tobacco in Connecticut, an industry established by this Department. In his new position Mr. Floyd receives far greater remuneration for his services than the Department could afford to pay, in view of the salaries paid to others by the Government.

The interest in the work of the Bureau of Soils is growing, and the demands for work in different parts of the country are increasing, as evidenced by the liberality of Congress in enlarging the appropriation and by the many requests received for the extension of the different lines of investigations. The Bureau of Soils now has a force of over 100 persons, 75 of whom have had a scientific training. It is believed that the results of the work in showing the conditions and resources of the soils of the country and in giving the people precise and accurate knowledge regarding the possibilities of the soils justifies fully every expenditure that has been made and every recommendation that will be made for the further extension of the work. With the fierce competition for commercial supremacy now operating, every particle of information bearing upon the natural resources of the country which will in any way tend to increase the production of our present crops or to develop new methods or build up new industries is of the utmost value, especially if, as in this case, the people are inspired with sufficient confidence to heed the advice of the Department and to take advantage of its work.

Cooperation with State Institutions.

During the year this Bureau has cooperated, as far as possible, with State institutions, including experiment stations, boards of agriculture, and geological surveys; also with Bureaus and Divisions of this Department, as well as with other Departments of the Government. Such cooperation has been particularly close with the North Carolina department of agriculture and with the Illinois experiment station, both of which institutions have contributed money toward the expenses of the soil survey in their respective States. In other States the cooperation has been just as cordial, but the institutions have not been able to render financial assistance. Their advice has been sought and given wherever possible in arranging for and in the carrying on of the work, and the work has been done, as far as possible, with the ultimate object of being of service to the State institutions in the prosecution of more detailed work. The Utah experiment station has cooperated in the line of drainage investigations and has contributed valuable assistance and advice in the work that has been started at Salt Lake City. The Connecticut experiment station and the Pennsylvania experiment station have continued their cooperation in the tobacco investigations with credit and profit to all of the institutions concerned.

The Bureau of Soils, through its laboratories, its soil survey, and its other lines of investigation, has cooperated with and has helped other Bureaus and Divisions in the Department, and has cooperated with the War Department in furnishing an assistant to organize a soil survey in the Philippine Islands, and in furnishing assistants to inspect the soils of some of the military posts and to advise as to the treatment in the establishment of parade grounds, a matter which is of considerable importance, involving the expenditure of large sums of money where the natural soils are not suited to the formation of a permanent sod.

Progress and Cost of the Soil Survey.

The area surveyed and mapped during the fiscal year was 14,541 square miles, or 9,306,240 acres, and the area previously reported as having been surveyed was 8,082 square miles, making a total of 22,623 square miles, or 14,478,720 acres. This work was carried on during the year in twenty-five States and Territories and in Porto Rico.

The following table shows the total area surveyed during the fiscal year 1902, together with that previously reported, in each of the thirty States and Territories in which the soil survey work has been carried on. This work has been uniformly done on a scale of 1 inch to the mile, and the maps have been published or are ready for publication. This table does not include any areas in which work of reconnoissance merely has been done, but only areas in which actual soil surveys have been made and soil maps prepared.

Areas surveyed and mapped during fiscal year ended June 30, 1902, and the areas previously reported.

State or Territory.	Work during 1902.	Work previously reported.	Total.	
	Sq. miles.	*Sq. miles.*	*Sq. miles.*	*Acres.*
Arizona	95	400	495	316,800
California	753	1,401	2,154	1,378,560
Colorado	150	.....	150	96,000
Connecticut	.....	245	245	156,800
Georgia	571	.....	571	365,440
Idaho	399	.....	399	255,360
Illinois	1,359	.....	1,359	869,760
Iowa	432	.....	432	276,480
Kansas	461	.....	461	295,040
Kentucky	330	.....	330	211,200
Louisiana	202	.....	202	129,280
Maryland	418	1,762	2,180	1,395,200
Massachusetts	.....	155	155	99,200
Michigan	828	.....	828	529,920
Mississippi	666	.....	666	426,240
Missouri	168	.....	168	107,520
Montana	105	.....	105	67,200
New Jersey	908	.....	908	581,120
New Mexico	.....	100	100	64,000
New York	490	.....	490	313,600
North Carolina	1,625	1,800	3,425	2,192,000
Ohio	500	480	980	627,200
Pennsylvania	519	420	939	600,960
Porto Rico	330	.....	330	211,200
South Carolina	686	.....	686	439,040
Tennessee	547	.....	547	350,080
Texas	495	.....	495	316,800
Utah	.....	768	768	491,520
Virginia	1,354	250	1,604	1,026,560
Washington	150	301	451	288,640
Total	14,541	8,082	22,623	14,478,720

The following table shows the area surveyed and mapped and the cost of the work during the fiscal year ended June 30, 1902:

Areas surveyed and mapped and cost of the field work during fiscal year ended June 30, 1902.[a]

State or Territory.	District.	Area surveyed.	Cost per square mile.	Total cost.
		Sq. miles.	*Dollars.*	*Dollars.*
Arizona	Yuma area	95	4.61	437.95
California	Imperial area	169	3.17	535.73
Do	Salinas Valley	344	3.42	1,176.48
Do	Ventura area	240	3.77	904.80
Colorado	Rockyford area	150	4.73	709.50
Georgia	Cobb County	346	1.44	498.24
Do	Covington area	225	.71	159.75

[a] This includes the salaries of the men while in the area and their subsistence expenses, but not the cost of transportation to and from the area.

Areas surveyed and mapped and cost of the field work during fiscal year ended June 30, 1902—Continued.

State or Territory.	District.	Area surveyed.	Cost per square mile.	Total cost.
		Sq. miles.	*Dollars.*	*Dollars.*
Idaho	Boise area	399	1.81	722.19
Illinois	Clinton County	494	.88	[a] 434.72
Do	St. Clair County	215	1.15	[a] 247.25
Do	Tazewell County	650	1.39	[a] 903.50
Iowa	Dubuque area	432	.94	406.08
Kansas	Wichita area	461	1.94	894.34
Kentucky	Union County	330	2.20	726.00
Louisiana	Lake Charles area	202	3.71	749.42
Maryland	Harford County	418	1.48	618.64
Michigan	Allegan County	828	1.44	1,192.32
Mississippi	Yazoo area	656	2.24	1,489.96
Missouri	Howell County	168	1.14	191.52
Montana	Billings area	105	4.96	520.80
New Jersey	Salem area	493	1.42	700.06
Do	Trenton area	415	2.23	925.45
New York	Westfield area	260	2.89	751.40
Do	Elmira area	230	2.03	466.90
North Carolina	Alamance County	365	1.32	[b] 482.80
Do	Carey area	63	3.11	[b] 195.93
Do	Craven area	697	.96	[b] 669.12
Do	Hickory area	500	1.01	[b] 505.00
Ohio	Columbus area	338	1.34	452.92
Do	Toledo area	162	.95	153.90
Pennsylvania	Lebanon area	[c] 519	1.48	768.12
Porto Rico	Arecibo to Ponce	330	5.02	[d] 1,655.55
South Carolina	Abbeville area	686	1.01	692.86
Tennessee	Montgomery County	547	1.68	918.96
Texas	Alvin area	280	2.45	686.00
Do	Willis area	215	2.70	580.50
Virginia	Bedford area	[c] 382	2.11	806.02
Do	Harrisonburg area	542	1.44	780.48
Do	Prince Edward area	430	1.32	567.60
Washington	Walla Walla area	150	1.82	273.00
		14,541	1.83	26,551.76

[a] Of these amounts, $624.95 was spent by the Illinois experiment station.
[b] Of these amounts, $914.20 was paid by North Carolina department of agriculture.
[c] The portions of these areas surveyed in the previous fiscal year were given in the last report.
[d] Of this amount, $300 was paid by the Porto Rico experiment station.

RECAPITULATION.

Cost of field work		$26,551.76
Supplies		858.84
Railroad transportation		2,766.28
Preparation of reports		12,870.17
Total cost of soil survey		43,047.05
Paid by State organizations		1,839.15
Paid by Department of Agriculture		41,207.90
Area surveyed	square miles	14,541
Cost of work in field	per square mile	$1.83
Preparation of reports	do	.88
Transportation and supplies	do	.25
Average cost	do	2.96
Average cost to Department of Agriculture	do	2.81

It will be noticed that the cost of the work per square mile varies from 71 cents in the Covington area, Georgia, to $5.02 for the work in Porto Rico. The average cost has been $1.83 per square mile, as against $2 per square mile during the preceding fiscal year. The area covered is over two and one-half times as large, and the work has cost 17 cents per square mile less than last year. The variation in the cost per square mile is due in part to the character of the country, the condition of the roads and of the weather, the complexity of the soils, the presence and character of alkali in the Western areas, and the accuracy of the base maps used. The average cost to the Department of Agriculture of the work complete, including supplies and railroad transportation, the preparation of reports, and the salaries of the men during the three winter months, when the field work has practically to be suspended, has been $2.81 per square mile, as against $3.26 per square mile last year, a saving of 45 cents per square mile. This saving is due not only to the greater efficiency of the field parties by reason of their better training, but also to the longer average length of the field season for each party, which has been accomplished by moving the parties from place to place as the season advances. It has been found possible to keep some of the parties out during the winter in Arizona and southern California, and to shift parties working in the Northern States during the summer months to the Southern States during the fall. In this way the average length of the field season has been something over nine months per party, and it is believed that this can be considerably increased, although it is advisable to have each party spend some time at headquarters, not only for the final revision of their reports and maps, but to get acquainted with the office and laboratory work and to keep in close touch with the objects and purpose of the soil survey.

THE FIELD FORCE.

The organization of the field force has been carried to a very high state of efficiency. Administratively the very greatest of care and attention to details is given, and the low cost per square mile shown in the preceding statements is due in a large measure to the judicious and economical management of the force. The salaries of the soil experts employed by the Bureau are low as compared with those paid in other branches of scientific work. The average expense of a party of two men in the field for subsistence and the hire of a team averages about $120 per month, or $1,080 for the field season of nine months. The parties are equipped with the most modern instruments for the classification and survey of soils, and it has been possible to furnish them with such explicit instructions as to the character of their work, the subjects they are to investigate, and the subjects which are to be discussed in their report upon the area that they know exactly

what is to be done on entering a given area and can proceed with their work with the minimum of time for preliminary investigations or reconnoissances. They are required to report to the central office at least once each week, noting the area surveyed, the new soil types established, and the character of their work, and to send in from time to time sections of their map for criticism and suggestion as the work proceeds. It is required that each party shall complete the map in all details and write up the report in final shape before leaving the area. These reports are then typewritten, and a copy returned to the field party for correction or for additions or changes. The work of each party is thoroughly inspected, so far as this has been possible, in order to correlate the new soil types with those already established, and to confer with the men as to suggestions which can be safely made of new methods of cultivation or of new industries which may be established. As the work of the soil survey assumes greater proportions this inspection work becomes more and more necessary and more valuable, and it is advisable that a regular inspection force should be established for the several districts into which the country may be divided.

The scale upon which the soil maps are published enables tracts as small as 10 acres to be represented, and while there must always be some variation allowed in each type, as it would be confusing to show too much detail on the maps, still, where a type is represented by even a small tract of 8 or 10 acres, it is shown upon the soil map, so that landowners may rely upon an accurate classification of their soils according to the types established.

The reports describe in all necessary detail the characteristics of the soils and their important variations; the history of the settlement and agricultural development of the area; the climate, physiography, and geology; the agricultural methods in use and the agricultural conditions in the area, such as the tenure and size of the farms, the efficiency of labor, the principal products, and transportation and market facilities, together with such special problems as may be encountered, such as hardpan, acidity, irrigation, seepage waters and drainage, alkali, and the reclamation of swamp or worn-out lands or alkali soils, as these all have their bearing upon the commercial use and value of the soils.

RELATION OF THE SOIL SURVEY WORK TO THE EXPERIMENT STATIONS.

With the increasing interest in the soil investigations and the economic value which the results have shown in a number of cases, the experiment stations are taking a lively interest in this work, and it seems proper to mention the true relation which should be established between them and the Department in the further prosecution of the work. It seems advisable that the management of the soil survey

should be vested in the Department of Agriculture. This insures continuity in the work and uniform classification of soils; also the benefit of experience in other localities in advising as to the commercial possibilities and value of the introduction of new methods of culture and of new crops and industries. It is advisable that the experiment stations and other State institutions should cooperate in this work to the extent of furnishing assistants or financial aid, as this insures an intimate knowledge of the conditions of the area to the State organization, as well as a larger amount of work within the borders of the State. In many cases, if such financial assistance be given, one or more parties can be assigned for continuous work in a State where, if the expenses were all borne by the Bureau of Soils, a party could be assigned for only a portion of the season. Various State organizations have contributed $1,839.15 toward the field expenses of the soil survey during the past year.

These soil surveys are in the nature of a general reconnoissance of the area. They show the conditions which prevail, and the maps show the character and distribution of the soils. This is, however, merely a basis for further work, and it is necessary in many cases that the information thus furnished and the suggestions which are made should be followed by further investigations and practical demonstrations of the efficiency and commercial value of the suggestions in order to insure their successful adoption by the residents of the area. Farmers are proverbially ultraconservative as to their methods, and are usually, and often justifiably, very unwilling to accept advice unless it can be shown that improvement will surely follow. Such demonstration work can, in most cases, be better accomplished by the stations than by the Department of Agriculture, for the station forces have a more intimate knowledge of the conditions and of the people, and are, as a rule, in closer touch with the people than is the Department, and with these reports and maps they have the basis for further work in the improvement of the agricultural conditions of the area, upon which they can expend their full energy and all the resources at their command. If the soil-survey work is not followed up on these practical lines, much of the efficiency and value of the work will surely be lost.

As pointed out in my last report, the experience of the men engaged in this work is likely to be invaluable, not only to them, but to the country as well. Spending, as they do, from three to nine months in an area, making a critical study of the soils, crops, methods of cultivation, and market and transportation facilities, and bringing together this experience from all sections, the men have unusual opportunities for securing a wide knowledge of the agricultural industry of the country and its resources. This is training up a class of men fitted to observe and appreciate resources and advantages that should be of

great value in the further development of the agricultural interests of the United States as the country becomes more thickly settled and the strife for commercial supremacy becomes greater. As these men become riper in experience and judgment and have a fuller knowledge of the agriculture of the country, they will doubtless be called to positions of trust and responsibility in State organizations and in commercial enterprises in which their experience and ability will be invaluable. This is and should be one of the important functions of the Department, and the influence of the Department will be felt more and more throughout the country as these men are called to such positions.

PAST AND PROPOSED WORK OF THE BUREAU OF SOILS.

The statements following show the results that have been accomplished during the past year and the work that is proposed during the present and the next fiscal year in each of the States. This is of course subject to change as to details as the time approaches for the actual prosecution of the work. It is given as the basis for the continuation and extension of the work.

ALABAMA.

No work has been done in this State during the past fiscal year, but it is proposed this fall to make a soil survey of Perry County, which lies partly in the black calcareous prairie belt and partly in the sand region. Two parties will be assigned to this area in October, with the expectation that the whole of the county can be surveyed during the present field season. On the completion of this work both parties will be transferred to Mobile County to make a soil survey of that area, particularly in the interest of the truck growers, and to investigate the adaptation of the soils to tobacco. After this it is contemplated to make a soil survey in Marshall County in the interest of the fruit and tobacco growers, and to survey Lauderdale County, if possible. In all, it would be advisable to spend nine months in Alabama during the next field season.

ARIZONA.

During the past field season a soil survey was made of the area below Yuma, where the waters of the Colorado River are taken out for irrigation. The whole area covers about 95 square miles, although only a portion of it is at present under ditch. A considerable part of this area is subject to overflow during flood times in the Colorado River, and schemes have been proposed for dikes and levees to prevent this overflow, which, if carried out, will add a considerable area of valuable land to the irrigated district. This tract, with its tropical climate and fertile soils, has been compared to the delta of the Nile, and it is the

intention of the Department, through its soil survey and through the work of the Bureau of Plant Industry, to see if crops equally as valuable as those cultivated along the Nile and adapted to this tropical climate can not be introduced.

This party was in charge of Mr. J. Garnett Holmes, who has had considerable experience in soil survey work in other parts of Arizona and in southern California.

It is believed that the information obtained in this work will be the basis of most valuable economic development in the introduction of crops from Algeria and Egypt. There is quite a variety of soils of different character in this area, and while there is considerable trouble with alkali it is believed that this problem can be easily controlled and that the locality will develop into one of the important irrigated districts of the West.

It seems advisable to spend three months in a soil survey of the upper Gila Valley around Solomonville during the next field season.

ARKANSAS.

No soil surveys have been made in this State during the past fiscal year, but a party is at present in the State, making a survey around Stuttgart. It is impossible at this time to make any statement as to the economic results of this work.

CALIFORNIA.

Soil surveys have been carried on in three areas during the fiscal year, namely, around Imperial in the Colorado Desert, in the Salinas Valley, and in the Ventura area.

The work in the Salinas Valley was undertaken particularly in the interest of the sugar-beet growers. This was formerly a great wheat area, but in recent years the yield of wheat has fallen almost below the point of profitable production and barley has taken its place to a considerable extent. The rainfall, however, is so variable that crops are uncertain without irrigation, and irrigation systems are now being planned, particularly for the sugar-beet industry, which has developed to large proportions.

This party was in charge of Mr. Macy H. Lapham, and the area surveyed covered 344 square miles. Eleven different types of soils were recognized and their relation to the various crops determined. The relation of these soils to crops had been recognized to a certain extent, but the orderly classification of the soils can not fail to be of value in the future development of the agriculture of the area, especially as the industry is at present changing and developing along new lines.

All of the soils capable of cultivation in Ventura County were surveyed by a party under the charge of Mr. Holmes, the area aggregating 240 square miles. There are several valleys where irrigation is

practiced, the most extensive being the valley of the Santa Clara River. Over a large part of the area, however, crops are grown without irrigation, the principal crops being lima beans, sugar beets, and barley.

The soils of the upper part of the Santa Clara Valley are generally well drained and free from alkali. Extensive areas of the delta lands, including some of the most fertile soils of the county, are deficient in drainage, and the alkali problem is becoming more and more serious. As a result of the survey, and from experiments that have been made at the suggestion of the Bureau, it is evident that the alkali problem can be economically and efficiently controlled. Thirteen types of soils were recognized in this area and their relation to crops reported upon.

From the results attained in the irrigation of the area below Yuma, and from the exceedingly arid climate, it was believed that the Colorado Desert afforded exceptional facilities for the introduction of certain tropical plants, as well as for Egyptian cotton and other products successfully grown in Egypt and on the Algerian Desert. In furtherance of this idea, a company was organized under the laws of Mexico to construct a canal through Mexican territory and deliver water from the Colorado River to a point near Calexico, on the border line between this country and Mexico, to a company chartered under the laws of the United States to distribute the water to settlers in the Colorado Desert. The land was taken up under the homestead and desert-land laws and water rights purchased from this company for the irrigation of the lands. It was realized that it was very desirable, as this enterprise was starting, to make a soil survey in order to classify the soils and determine their alkali content and their relation to crops. Accordingly, Messrs. Means and Holmes were assigned to this work, and an area of 169 square miles was surveyed around Calexico and Imperial.

This country lies at or somewhat below sea level, the Salton Sink, the lowest portion of the desert, being about 270 feet below sea level. Five distinct types of soil were recognized in this area, ranging from a loose, incoherent dunesand to a very impervious clay, and including a sand, a sandy loam, and a loam. The area is everywhere underlain with a stiff, impervious clay containing alkali. The Imperial clay is difficult to cultivate, and water penetrates it very slowly. Large areas of alkali lands were encountered, and it is estimated that about 54 per cent of the area has more than 0.4 per cent alkali as an average for 6 feet in depth. There are serious problems, therefore, to be encountered in the successful development of agriculture in the area. It is believed that about 50 per cent of the area can at present be cultivated in nearly all crops adapted to the locality, while a considerable portion of the remainder may be reclaimed by drainage, or can be used for alkali-resistant crops.

The importance and necessity of having this knowledge of the soil conditions has been recognized, and very urgent requests have been received for an extension of the soil-survey work to embrace practically all of the lands in the Colorado Desert which can be irrigated, as a basis for the intelligent cultivation of this area, and to insure, as far as possible, the successful settlement of the country. Recognizing the importance of this work, it is proposed to combine a number of our field parties and place them in the area during the coming fall and winter to make a soil survey of about 1,500 square miles of the Colorado Desert, so that settlers may know the actual character of the soils which they purchase, and that industries can be established on the soils best adapted to them.

In addition to this work it is proposed to extend the soil survey to the Santa Clara Valley in the interest of sugar-beet, grain, and stock production, and to take up the San Bernardino Valley in southern California, which is the last of the great fruit areas in southern California that remains to be surveyed. It is believed that very valuable results will be attained by the soil survey when it is extended to the sugar-beet area around Chino and the fruit areas of Pomona, Riverside, San Bernardino, and neighboring towns.

In all it appears desirable to spend twenty-one months, on the basis of one party, in the State of California during the next field season, and it is believed that the importance of the areas to be investigated fully justifies the time and attention to be given to the work.

COLORADO.

During the present field season a soil survey is being made, under the charge of Mr. Macy H. Lapham, of the irrigable lands of the Arkansas Valley between Rockyford and the Kansas State line. There will be nearly 1,000 square miles of intricate soil mapping, with alkali problems to be worked out, but it is believed that by concentrating some of the northern parties in this area during the fall the whole area can be surveyed. This work is undertaken principally in the interest of the sugar-beet growers and of the melon and truck growers. Not only is it desirable to understand better the relation of the soils to crops, but with the extension of irrigation systems the natural drainage is found to be deficient and alkali is rising and threatening trouble and losses. The work has progressed far enough to indicate that the alkali problem can be economically and efficiently controlled, and it is believed that the classification of the soils will give a basis for the most profitable development of the sugar-beet and truck interests of the area.

It appears desirable to spend about six months during the next field season in a survey of the San Luis Valley, where the alkali problem is becoming far more serious even than in the Arkansas Valley.

CONNECTICUT.

No extension of the soil survey has been made in the Connecticut Valley since 1899, but with the extension of the profitable industry of producing the shade-grown Sumatra tobacco there is a very strong demand now that the survey should be extended to include many smaller valleys on either side of the area surveyed in 1899, and it is proposed to spend about three months in the State during the next field season, to give a basis for the extension of the tobacco industry on either side of the main valley.

DELAWARE.

No surveys have been made as yet in Delaware, and none is contemplated during the present year. There is, however, a demand for a soil survey to extend over the entire State, and it seems desirable to spend three months in the State during the next fiscal year in such work.

FLORIDA.

No surveys have been made in this State up to the present time, but it is proposed, if suitable arrangements can be made for a base map, to make a soil survey in Gadsden County in the interest of the tobacco growers.

GEORGIA.

During the past fiscal year two areas were surveyed in Georgia, including Cobb County and an area around Covington, the former being under the charge of Mr. R. T. Avon Burke and the latter of Mr. Herbert W. Marean.

It was hoped that the survey in Cobb County would show the possibilities of fruit raising, but it is believed that the prospects for this industry are not so favorable in this locality as they are farther north, and it is therefore proposed to extend the survey to include the northern half of the Ellijay sheet of the United States Geological Survey to include portions of Union, Gilmer, and Fannin counties in the interest of the fruit growers and as an extension of the survey in the mountain areas in Virginia and North Carolina. It is intended to give about six months to this work during the next field season, and it is also proposed to survey an area in Decatur County in the interest of the tobacco growers.

HAWAII.

No soil survey has been made in this Territory as yet, but there have been strong demands for the work, and a recommendation will be made for needed legislation to permit the Department to extend its soil survey work to that Territory at an early date.

IDAHO.

A soil survey party, under the direction of Mr. C. A. Jensen, has completed a survey of the Boise area, extending from Boise City to a point some distance west of Caldwell and including the principal irrigated lands of that section. Serious problems were encountered in this area in the occurrence of hardpan in the soils, and there were other soil problems upon which advice was given which it is believed will be of material economic value in the agricultural development of the area, which is assuming considerable importance.

A party, in charge of Mr. Louis Mesmer, has been assigned to survey the area between Lewiston and Moscow. The wheat yields in this area have declined, and the people are anxious to introduce forage crops, and the soil survey work is to be used as a basis for the consideration of this problem.

Representations have been made to the Department which make it appear advisable to spend about six months in the next field season in the survey of the irrigated lands of the Blackfoot area.

ILLINOIS.

Through cooperation with the Illinois experiment station the Bureau was enabled to put two parties in the field during the early part of the present field season, and at the close of the fiscal year had made a soil survey of Tazewell and Clinton counties, under the direction of Mr. Jay A. Bonsteel, and a portion of St. Clair County, under the direction of Mr. George N. Coffey. During the remainder of the present field season it is proposed to finish St. Clair and Clay counties, if time permits. So far as this work has been examined, particularly the finished maps of Tazewell and Clinton counties, it is believed that the results will be of material benefit and value to the farmers. Thirteen soil types were recognized in Tazewell County and seven in Clinton County and their relation to crops reported upon.

A copy of the soil map and report on the Tazewell area has been sent to one of the most intelligent and progressive landowners, with the request that the work be critically examined and freely criticised, so that we may get advice in advance of publication as to the practical utility and usefulness of the work and suggestions as to other lines that could be profitably developed.

So far as the Bureau is at present informed this work has aroused a great deal of interest, and it is believed that it will be of value to the people. Requests have been made for upward of 25,000 copies of each of these reports, with accompanying maps, to supply the local demand which is likely to arise. So much interest has been taken in this survey that urgent requests have been made by the Illinois experiment station that the work shall be continued in the State, and it is proposed to assign a party to the State for the entire field season of

nine months during the coming year. It is understood that the station will continue its cooperation, and possibly arrangements can be made for more than one party, so that the work may progress rapidly.

One of the most serious problems encountered in the soil survey, particularly in Clinton County, is in the hardpan, or the compact nature of the underlying clay subsoil, in some of the soil types. This not only renders cultivation difficult, but makes crops uncertain under certain climatic conditions, and an investigation of the cause of this and a possible remedy is now engaging the attention of the laboratories of the Bureau.

INDIANA.

No work was carried on in this State during the past fiscal year, but a party is at present engaged in making a soil survey of Posey County. This is in charge of Mr. Marean, and the whole area of the county is to be surveyed. This is particularly in the interest of the truck growers, as large quantities of watermelons and other truck crops are produced on some of the sandy soils of the area.

While there has been some demand for the extension of this work to include the whole area of the State, the plans at present contemplate a survey of only three months' duration in Boone County during the next field season.

IOWA.

During the past fiscal year a soil survey has been made around Dubuque, under the charge of Mr. E. O. Fippin. Eight soil types have been recognized and their relations to crops reported upon.

Rather strong demands have come for the continuation and extension of this work to include the entire State, but it is proposed to spend but six months during the next field season in surveying a part of Cerro Gordo and Story counties in the interest of sugar-beet production, as well as of general farming, stock raising, and dairying.

KANSAS.

During the past field season 461 square miles have been surveyed around Wichita. It was expected that this would be a very uniform area, but nine soil types were encountered, each with distinct properties and adapted more or less to different crops or requiring different methods of cultivation. The possibilities are shown of some degree of specialization of crops and the introduction of fruit interests to take the place of the almost universal crops of wheat and corn, which it is believed will be of value in the further development of the agricultural interests of the area. This work has been in charge of Mr. J. E. Lapham.

It seems desirable to spend about six months in the survey of a portion of the Parsons sheet of the Geological Survey, in the north-

central part of the State, in what may be considered the beginning of the semiarid portion of the West.

KENTUCKY.

During the past fiscal year a survey was made of Union County, which has an area of about 330 square miles, under the charge of Mr. Marean. Eight types of soil were recognized, and while apparently the soils are quite uniform in texture and natural fertility, the possibilities of introducing new industries and better methods of cultivation were clearly indicated. At present the area is given up almost exclusively to wheat culture, but there are good opportunities for greater diversification through improvements in the management of soils, the rotation of crops, and in growing products new to the area.

Demands for soil-survey work in Kentucky have been quite strong, and it seems desirable to assign a party to that State for nine months during the next field season, the surveys to include Henderson, Christian, and Scott counties. This work will be mainly in the interest of the tobacco growers, stock raisers, and general agricultural interests.

LOUISIANA.

A soil survey was made during the last fiscal year by Mr. W. H. Heileman in the Lake Charles area in the interest of the rice growers, an area of 202 square miles having been covered. Six types of soil were recognized in what was supposed to be a uniform area, and it was found that the relation of these soils to the yield of rice was quite marked, and the desirability of extending the survey to other rice districts was clearly recognized. Moreover, under the present system of exclusive rice culture, not even sufficient food for the stock is produced, while meat and vegetables for the support of the people are imported in large part from other States. There is no reason for this so far as the soils or climatic conditions are concerned, and it is pointed out that a proper diversity of interests would materially add to the welfare of the community.

It seems desirable to spend three months during the next field season in Arcadia Parish in the interest particularly of the rice, sugar, and tobacco producers.

MARYLAND.

Very strong demands have come for the continuation of the surveys in Maryland to include the whole of the State, and particularly of Worcester, Somerset, and Baltimore counties, and it is proposed to assign a party there for six months during the next field season.

During the past fiscal year Harford County, covering an area of 418 square miles, has been surveyed by a party under the charge of Mr. W. G. Smith. There is no place where the survey has been car-

ried on where more interest has been manifested and more use has been made of the work than in this State. Possibilities have been shown, particularly in Prince George, St. Mary, and Calvert counties, of the specialization of crops in the line of fruit growing, trucking, and general farming and dairying, which would very materially benefit the people and add greatly to the prosperity of the community.

While much work has already been done in this State, it is believed that the intelligent interest and appreciation shown in the results of the work justify the Department in pushing the surveys and giving the people the information they seem to need, and which they appear ready to benefit by in the practical extension of their agricultural interests and in developing the prosperity of the State.

MASSACHUSETTS.

No work has been done in this State since 1899, and the establishment of the profitable Sumatra tobacco culture has aroused a decided demand for the extension of the survey of 1899 in the Connecticut Valley northward to the State line and on either side of the area which has already been surveyed. It is proposed to spend three months during the next field season in the extension of this work, in the interest particularly of the tobacco growers.

MICHIGAN.

During the past fiscal year Allegan County, covering an area of 828 square miles, has been surveyed under the direction of Mr. E. O. Fippin. This work was undertaken particularly in the interest of the fruit growers along the lake shore and of the sugar-beet and general agricultural interests. This appears to be one of the most valuable pieces of work the Bureau has done, and it is believed that the results, which form a part of the report of the field operations for 1901, will be of very great value to the people in the extension of their present industries, the improvement of methods of cultivation, and the development of new crops, which it is believed can successfully be introduced. The experience of the people of this section will also prove of value to other communities, and the lessons taught by the soil survey will, it is believed, have value outside of the area.

No work is contemplated for this State during the next field season, but strong demands have come for an extension of the survey, and it is believed that it should be resumed at the earliest practicable time, particularly in the interest of the sugar-beet and fruit growers.

MINNESOTA.

No work has been done in the State, but strong demands have come for the extension of the soil survey, and it seems desirable to assign a party there for six months during the coming field season, the first area to be surveyed being probably Lyon County.

MISSISSIPPI.

During the past fiscal year the Bureau has mapped an area of 656 square miles around Yazoo City, the work being in charge of Mr. Jay A. Bonsteel.

About one-third of the area is in the uplands and two-thirds in the Yazoo and Mississippi Delta. The upland soil is a typical loess, and it has been suggested, as a result of the survey, that alfalfa can be produced on it as a basis for stock raising. In its present condition it is little esteemed as a cotton soil.

It was supposed that the delta would present a very uniform soil condition, but four soil types were recognized, each with very distinct agricultural values. The Yazoo clay is the most productive cotton soil, yielding from 1⅓ to 1⅝ bales per acre, and even more under the best methods of cultivation. This, however, covers only about 17 per cent of the delta. The Yazoo loam, covering about 6 per cent of the delta, yields from three-fourths to 1 bale of cotton per acre. The Yazoo sandy loam, covering 9 per cent of the delta, produces about three-fourths of a bale to the acre, while the Sharkey clay, covering 68 per cent of the delta, is not cultivated on account of the annual overflow. The flood waters leave the land about the 1st of June, but although the land is subsequently dry it is then too late for crops to be put in.

It has been pointed out, as a result of this soil survey, that the Yazoo sandy loam is a typical early truck soil, and that, with the prevailing climatic conditions, potatoes or other truck crops would prove a remarkably profitable industry on this soil.

The Sharkey clay is a wonderfully productive soil, and it appears from the investigations that have been made that the engineering problem of protecting it against the annual floods would not be very difficult, nor expensive when the value of the soil so reclaimed is considered. It is believed that these three suggestions, if followed by the people, will well repay the money expended in the survey.

It is proposed to continue and extend this work to include a larger area of the delta lands and possibly to take up one other area in the State, devoting in all about six months in the next field season to the work.

MISSOURI.

During the latter part of the past fiscal year Mr. Fippin was assigned to survey Howell County, in the fruit area of the Ozark region. It is probable that the whole area of this county will be surveyed during the present field season. It has been found that the soils are remarkably uniform and that the fruit interests can be extensively developed, but it is advisable that the methods be improved to attain the highest commercial success.

The demand for the continuation and extension of this work in Missouri has been so great that it seems desirable to assign a party there for nine months for the survey of Shelby, Saline, and Webster counties during the next field season.

MONTANA.

During the past fiscal year the Billings area, comprising about 105 square miles, has been surveyed under the direction of Mr. C. A. Jensen. Considerable trouble and loss has resulted from the rise of alkali in this area, and the survey was planned with particular reference to determining the possibility of preventing this trouble and reclaiming the land already damaged. It is considered quite feasible to accomplish this object, and it is probable that a demonstration will be made of the efficiency of proper drainage in preventing the rise of alkali and in reclaiming the alkali soils of this locality.

It would seem desirable to assign a party to this State for six months in the next field season to make surveys in the Gallatin Valley and in the Milk River Valley around Glasgow.

NEBRASKA.

No work has heretofore been done in this State, but it is proposed to assign a party for nine months of the next field season to make soil surveys of the Grand Island and Holdrege areas in the interest particularly of the sugar-beet industry.

NEW JERSEY.

During the fiscal year just passed a survey of the Salem area, comprising 493 square miles, was completed under the direction of Mr. Bonsteel, and a survey of the Trenton area, under the charge of Mr. Burke, has been started and will be completed during the present field season.

The Salem area lies wholly within the Coastal Plain region and has eleven different types of soil. These are adapted to various truck crops, fruit interests, and general farming. The people have already recognized the relation of the soils to crops and have adapted their industries to the various soil areas. The success has been so remarkable that the lesson may well be carried to other localities along the Atlantic coast where similar soils prevail.

The Trenton area lies partly in the Coastal Plain and partly in the Piedmont Plateau, and gives even a wider range of soils. This area is particularly adapted to specialization of crops and the building up of widely different agricultural interests.

The interest in this work justifies its continuation, and it seems desirable to spend six months during the next field season in the survey of the Monmouth Shore area, east of and immediately adjoining the Trenton area.

NEW YORK.

During the past fiscal year a soil survey was made of the Westfield area under the direction of Mr. Burke, and of the Elmira or "Big Flats" area under the direction of Mr. Mesmer.

The Chautauqua grape belt, extending for 30 miles along the Lake Erie shore, is within the first-named area. The old beaches, where the grape industry was first developed, have been outlined upon the map, and the Dunkirk clay, upon which the industry has since been developed, is also located, as well as several other foreland and upland soils adapted to general farming and dairying.

The survey of the Elmira area was undertaken particularly in the interest of the tobacco growers, and more especially to see if the cultivation of Sumatra tobacco could be extended there, and to form a basis for other tobacco investigations for the improvement of their present crops. The results indicate that the Sumatra tobacco can not successfully be produced within the area surveyed, except in one small area of not over 10 or 15 acres, where it might be grown. An experiment is in progress to determine this point, although this is not under the control of the Department. The results of the survey point to the need of further investigations of these soils, which under the present methods of cultivation require large annual applications of stable manure to produce satisfactory yields of the crops of the locality. There is an opportunity here for the work of the new division of soil management, which would probably yield results of value to the people.

During the present field season the survey has been extended to the Lyons area in the interest particularly of the sugar-beet growers. It is proposed during the coming field season to detail a party for nine months to make a soil survey of the whole of Long Island. This is particularly in the interest of the truck growers, and it is believed that the results will be of considerable interest and value.

NORTH CAROLINA.

During the past fiscal year a survey has been made of the Alamance County, Cary, and Craven areas under the direction of Mr. Coffey and of the area around Hickory under the charge of Mr. Caine.

Alamance County is in the Piedmont Plateau, and the work was undertaken in the interest of the cotton growers and general farming. Formerly this was an important bright-tobacco section, but the growth of this industry in the eastern part of the State has been the cause of a decline in tobacco production in the area, and the soils formerly adapted to this special industry have depreciated considerably in value. Various suggestions of a practical nature in the line of improved methods of cultivation and the introduction of new crops and new industries have been made as a result of the soil survey.

The work in the Craven area was carried on particularly in the interest of the truck growers and in order to outline the truck soils in this area, which is not as yet very thickly settled.

The work in the Hickory area was in the interest of general farming and, in the mountainous portion, of fruit growing. It is proposed to extend this work during the present field season to the Mount Mitchell area in the interest of the fruit growers.

There is no more interesting development at the present time in the Atlantic coast States than that of the fruit interests in the mountains of Virginia, North Carolina, Georgia, and Alabama. From the work so far done in these States it is clearly apparent that the soil has an important bearing on the different fruit crops, and the apple and peach soils can be identified and outlined as a basis for the intelligent development of these industries. Not only are certain soils adapted to apples, but certain varieties of apples do better on some soils than on others, and the same is probably true of other fruits.

The North Carolina department of agriculture has cooperated very cordially and very helpfully in this work, and it appears desirable to continue this cooperation, assigning a party there for nine months during the coming field season to extend the soil survey.

NORTH DAKOTA.

Very strong demands have come from this State for the extension of the soil survey to include most of the arable portion of the State. It has been impossible until recently to start the work there, but a party has just been assigned to the Grand Forks area, in the Red River Valley, under the direction of Mr. Jensen, who has had wide experience in similar areas in Utah and Montana.

Considerable quantities of alkali are encountered, but generally at a sufficient depth below the surface to enable the annual crops to be produced. The surface foot is usually free from alkali, and as there is no irrigation, and little chance for irrigation, it is believed that there is little danger of the alkali coming to the surface and spreading. It seems a risky thing, however, to have the valuable crops of the locality growing over and so close to these alkali salts, and the possibility of the rise of this alkali should be fully investigated. If it were in an area where water was available for irrigation, it could safely be predicted that the land would quickly be injured by the rise of alkali, but with no opportunity for irrigation the chances are that conditions may not become more serious than at present. This is a question, however, that these investigations will have to solve. The work is being carried on in cooperation with the State geologist.

It seems desirable to assign a party to this State for six months' work during the next field season.

OHIO.

During the past fiscal year work has been started in the Columbus area and in the Toledo area, and it is believed these will both be completed by the end of the present field season. The surveys are being made under the direction of Mr. W. G. Smith.

The Columbus area is devoted to general farming. While there is a certain uniformity in the soils, one of the principal soils is preeminently a wheat land and another chiefly a corn land, the character of the soils showing very strongly their peculiar agricultural values in the crops produced and in the success of these crops.

It is proposed to assign a party to this State during the next field season to survey a part of Ashtabula County in the interest of the fruit and tobacco growers.

OREGON.

No surveys have been made in this State, but it is proposed to assign a party there for six months during the next field season to survey an area around Salem, in the Willamette Valley.

PENNSYLVANIA.

During the past fiscal year a survey of the Lebanon area, in the interest of tobacco growers and general farming, was completed under the direction of Mr. Smith. The interest taken in the survey around Lancaster leads me to believe that the results of this work will be found of interest and practical value in the still higher development of the agricultural conditions of the locality.

It seems desirable to assign a party for three months during the next field season to make a soil survey of Clinton County, particularly in the interest of the tobacco growers.

PORTO RICO.

During the past fiscal year an area of 330 square miles was surveyed in a strip about 10 miles wide, extending from Arecibo to Ponce, the work being in charge of Messrs. Dorsey and Mesmer. Twenty-two types of soils were recognized, all of them markedly different from the soils encountered in the United States. Much of the country is rugged, broken, and mountainous, and as there were no available maps, the base map had to be made as the soil survey progressed. Many of these soils are not well adapted to agriculture, but the report deals fully with the conditions as they were actually seen, and it is believed that it will form a basis for a more intelligent development of the agriculture of the island.

It is deemed advisable that this survey should be extended to include the whole area of the island, of which about one-tenth is included in the area already surveyed, but under a change made in the wording of

the appropriation bill it will be impossible for the Bureau of Soils to continue this work. It will be recommended that such changes be made in the next appropriation act as will enable the Department to resume operations in Porto Rico. I know of no more valuable work the Department can do than to thus investigate the actual conditions in these island possessions, and the extension of the soil survey to them should give a basis for the best and most economical development of their agricultural resources at a time when so many people are looking to these islands for investments and when the people of the islands themselves need all the help that can be given them.

SOUTH CAROLINA.

During the past fiscal year an area of 686 square miles has been surveyed around Abbeville, and on the completion of this work the party, in charge of Mr. Taylor, will make a survey of Darlington County, particularly in the interest of the bright-tobacco growers and truck growers.

It is proposed to detail a party for nine months during the coming field season to survey an area in Spartanburg, Pickens, and Orangeburg counties, particularly in the interest of the cotton, fruit, and bright-tobacco growers.

SOUTH DAKOTA.

No surveys have been carried on in this State, nor are any contemplated for the present field season. It seems desirable, however, to assign a party for a period of three months during the next field season to start a survey in Brookings County.

TENNESSEE.

During the past fiscal year a survey in the interest of the tobacco growers was made of Montgomery County, embracing an area of 547 square miles, under the direction of Mr. J. E. Lapham. Among the important results of this survey has been the suggestion that one type of soil which is at present of little agricultural value and which covers a considerable area, is adapted to fruit growing, and it is believed that this interest could be introduced with profit to the community. It was hoped that the survey would be the basis of an investigation of the possibilities of improving the tobacco interests, but the appropriation for the Bureau was not sufficient to enable this to be done.

It is proposed to extend the soil survey to Greene, Cumberland, and Davidson counties, assigning a party to this work for a period of about nine months during the coming field season.

TEXAS.

During the past field season the Willis area of 215 square miles has been surveyed in the interest of the tobacco growers, and a party of

tobacco experts has been placed there to investigate the possibility of producing a more desirable filler tobacco.

The Alvin area was also started under the direction of Mr. Bennett, and this and the Brazoria area will probably be completed during the present field season. This is particularly in the interest of the fruit growers around Alvin and of the sugar interests around Brazoria.

It is also proposed to survey an area during the present field season around Vernon, in the Panhandle of Texas, in the interest particularly of the wheat growers and with the view that the results may be useful in the introduction of macaroni wheat.

Representations have been made to the Department which make it appear advisable to assign a party to this State for at least nine months during the next field season for surveys, particularly in Tyler County, and also around Austin and San Antonio.

UTAH.

The soil-survey work of 1899 and 1900 has been discontinued in this State, but it is proposed to assign a party for six months during the next field season to survey the irrigable lands around Utah Lake.

The work around Salt Lake City is being followed up by a drainage investigation having for its object the reclamation of some of the alkali lands.

VERMONT.

A strong demand is made for the extension of the soil survey in the Connecticut Valley in the interest of the tobacco growers, to see if the cultivation of the Sumatra tobacco can not be extended to that latitude. It is proposed to assign a party for three months during the next field season to extend the soil survey of the Connecticut Valley.

VIRGINIA.

During the last fiscal year the Bedford area and the Prince Edward area have both been completed, and the Harrisonburg area has been begun. All of this work has been under the direction of Mr. C. N. Mooney. It is proposed to finish the Harrisonburg area and the northern part of the Buckingham sheet of the Geological Survey during the present field season, and to assign a party to this State for nine months during the next field season to survey the southern half of the Buckingham sheet and the whole of the Harpers Ferry sheet, as well as an area around Norfolk.

The most important work has been done on the Bedford and Harrisonburg areas. These include portions of the Piedmont Plateau, of the Valley of Virginia, and of the intervening mountain area. The results of the work on the plateau and in the valley are important, but the greatest interest centers in the survey of the mountain soils, in

which the fruit interests are developing. It has been found that the different varieties and types of fruit are best adapted to different soils, and as the survey extends and these soils are being outlined the basis is presented for the most intelligent development of the fruit interests.

The Harpers Ferry area will take in a considerable portion of the valley, as well as of the plateau, and the results of the work should show the reason for the decline in agricultural value of the valley soils, and should suggest means for reviving the agricultural interests of what was once a prosperous community on what was considered the highest type of agricultural land.

The survey around Norfolk will be in the interest of the truck growers.

WASHINGTON.

During the past fiscal year the Walla Walla area, covering about 150 square miles and including practically all of the irrigable lands of that locality, was surveyed under the direction of Mr. Holmes. The work has just been finished and the results can not yet be reported.

WISCONSIN.

No work was done in the past fiscal year in this State, but Mr. Jay A. Bonsteel was assigned on July 1 of the present fiscal year to the Janesville area to survey the soils around Janesville, Stoughton, and Edgerton. This survey is in the interest of the tobacco growers, and is particularly to see if the Sumatra tobacco is likely to be adapted to this section, and to be a basis for the improvement of the type of tobacco at present grown.

It seems desirable to assign a party to this State for six months during the next field season to make a survey, particularly of Eau Claire County.

WYOMING.

No soil surveys have as yet been made in this State, but it is proposed to assign a party for six months during the next field season to survey the soils of the irrigable part of the Laramie sheet of the Geological Survey.

ESTIMATED COST OF PROPOSED SOIL SURVEY WORK.

During the fiscal year 1902 about $40,000 was spent on the soil survey with 10 survey parties. For the fiscal year 1903 an allotment of $60,000 has been made for this work with 15 soil survey parties. For the fiscal year 1904, for which estimates are being submitted to Congress, on the basis of the plans which have just been given for the continuation and extension of the work in order to meet the most urgent demands, an allotment of $120,000 would be necessary. This is based upon a total estimate of 243 months of field work contem-

plated by the above plans, which will require for its completion within the fiscal year 30 field parties, costing approximately $4,000 each, calculated on the basis of the work done during the last three years. Each party would survey about 1,200 square miles, making a total estimated area of 34,800 square miles, or 22,272,000 acres, in 38 States and Territories, which would be surveyed in that year.

Publication of the Report and Maps.

The results of the field work of the Bureau of Soils are published under authority of the joint resolution of Congress providing for the printing annually of the Report of Field Operations of the Division of Soils, Department of Agriculture, approved February 23, 1901. Under the interpretation of this resolution by the Public Printer, the report and accompanying papers have to be published at one time in a single volume, with the maps in a separate case. This is undesirable in many ways, for work that is finished in the winter or spring has to be held in the office until the succeeding February, when the report of the field work is all completed and sent to the Public Printer. This delays the publication for nearly eighteen months after the work is completed, and the public interests require that the work should be published as soon as possible after the completion of the field work. Furthermore, the publication of all the reports and maps in a single volume makes a bulky and expensive book to send to any person requesting information about a particular area. The demand also is so great that, although the Department has 8,000 copies of the bound report to distribute and the Senate and House of Representatives have together 9,000 copies, the Department received upward of 2,000 requests for the 1900 report which could not be filled. Reprints were ordered of all the reports, in editions ranging from 500 to 1,500 copies, and these were quickly exhausted. As the work becomes better known, many requests are coming from Senators and Representatives, and the opinion is freely expressed that the full value of the work can not be secured unless there is a liberal provision for its distribution within the area in which the work has been done. The requests for reprints of the 1901 report indicate that from 3,000 to 10,000 copies will be required to satisfy the demand, notwithstanding the fact that some of the States are ordering reprints of the maps for their own distribution.

In view of these facts it is recommended that the joint resolution be so amended as to permit of the Report of the Field Operations of the Bureau of Soils being published in parts or volumes as the work is completed, and also to provide for the reprinting as separates of the reports of field parties, with their accompanying illustrations and soil maps, in editions sufficient to allow 500 for each Senator to whose State the survey relates, 2,000 for each Representative in whose district

the survey may be made, and 1,000 for the use of the Department of Agriculture. This will insure the prompt publication of the results of the survey and a distribution through members of Congress, which my present information seems to indicate is desirable if the full value of the soil survey work is to be attained in the dissemination of the information thus gathered, promptly and freely, to the people who are interested.

Needed Legislation for Insular Surveys.

It seems desirable that the benefits derived from the soil survey work should be extended to the insular possessions of the United States, and I recommend that the act making appropriation for the Bureau of Soils be so worded as to permit of the sending of soil survey parties to Porto Rico and Hawaii. Numerous demands have come for the extension of the work in both Porto Rico and Hawaii, and it seems probable that the work will be of particular value to these islands in the present state of the building up of their agricultural resources.

The work has already been started in Porto Rico and in the Philippine Islands, the latter through cooperation with the War Department and the civil government of the islands, in the detail of Mr. Clarence W. Dorsey to the Philippine government and the defraying of his salary and the expenses of the soil survey work by that government. The work can not be continued in Porto Rico nor started by the Department in any other of our possessions without a change in the wording of the appropriation act.

Investigations in Soil Management.

In the development of the soil survey many questions are presented of the possibility of improved methods of cultivation and handling of the crops, as well as of introducing new methods, new crops, and new industries. Some of these suggestions need more time and more study than can be given by the soil-survey parties in the limited time in which they remain in an area. Furthermore, the presentation of such suggestions in printed reports is apt to fail of securing proper recognition from the conservative farmer, who follows pretty much the methods used by himself and his predecessors on the land. Without these further studies and a practical demonstration of their efficiency many of the important results of the soil survey are liable to be lost.

For these reasons a division of soil management has been instituted in the Bureau, in charge of Prof. Franklin H. King. During the past year exceedingly delicate methods have been devised for the analyses of soils in the field. They are so sensitive that the amounts of nitrates, phosphates, sulphates, and the like which may be present, as indicated by water solutions, can be determined to within 4 or 5

pounds per acre 1 foot deep. With these methods it is possible to detect throughout the year fertilizers which were applied in the spring, and to trace the movement of these fertilizers from the place where they were applied down through the different depths of the soil. It has been found possible to show noticeable differences in the chemical composition of the soil in the same field, in some parts of which the crops are growing well, and in other parts of which they are but poorly developed. It appears that the time has arrived, looked forward to with much interest by scientists and practical men alike, when an analysis will show the need of any particular soil for certain fertilizers. It is too early to make a positive statement of this kind, but the indications are that this can soon be accomplished.

A considerable amount of work has been done with these methods on the soils of eastern North Carolina and of Wisconsin, and quite recently many of the important soil types which have been established by the Bureau in Georgia, North Carolina, South Carolina, Virginia, Maryland, New Jersey, Pennsylvania, and Wisconsin have been analyzed by these methods. These types represent all grades of soil, from the most productive to those which are quite unproductive; soils that are adapted to truck crops, tobacco, fruit, wheat, and corn; and soils under a range of climatic conditions with rainfall varying from 25 to 45 inches per annum.

The results of this work have led us to look upon the soil moisture as a great nutritive solution existing over the surface of the earth, the composition of which is everywhere approximately the same. The soil is a heterogeneous mixture of minerals, the predominant ones being silica, feldspar, mica, and other like silicates, resulting primarily from the disintegration and decomposition of igneous rocks, spread out often through the action of water over vast areas of land. All these minerals are but slightly soluble, and it is not unreasonable to expect that such a heterogeneous mixture of silicates in contact with water should yield a soil solution having sensibly the same composition and concentration. The older experimenters in Germany found that in making up solutions for water culture or for sand culture the concentration and composition of the nutritive solution must be the same within relatively narrow limits for success in plant development. The results of the past season indicate that the differences in the composition and concentration of the dissolved material in the soil moisture of various types of soil of widely different localities and of different agricultural values are little if any greater than the differences to be found in one and the same type of soil under good and under poor farm management.

The "early truck" soil of the Atlantic coast may be deficient in plant food and may require fertilizers for the best development of the crop, but even with such an application as would make these soils as

rich in plant food as the prairie soils of the Middle West, these light truck soils could not economically be made to produce as large corn crops as the prairie soils. The difference in the agricultural value of these different types appears to depend not so much upon the chemical composition as upon the physical properties of the soils, and especially upon their relation to moisture. In other words, the chemical characteristics of the soil influence the yield of crops, while the physical characteristics have generally the greater importance in determining the kind of crop adapted to the soil.

This work will require much further investigation before these statements can be definitely proved, but the amount and character of the evidence so far obtained is such that these ideas may be taken safely as working hypotheses. They are now serving us in this capacity in suggesting and giving direction to studies which are confidently believed to have far-reaching importance for agricultural methods and practice, studies which in all probability could not have been conceived or planned without the investigations which have just been briefly outlined. The results of the work indicate, as might be expected, that the composition of the soil moisture is largely influenced both by the cultivation and by the cropping of the soil, and appear to show in what way and to what extent cultivation can be depended upon to change these important characteristics.

The results of the last year's work also seem to indicate the very superficial nature of the droughts which so seriously affect crops in the Eastern and Middle Western States. It has been frequently observed that in a time of drought, when the surface soil becomes desiccated and the plants are suffering, the subsoil at a depth of 1 or 2 feet contains but little less than the average amount of moisture, and it has frequently been observed that the crops are much more shallow rooted than they are in the far West. This has been variously ascribed to the uniform texture of the soils and subsoils in arid regions, and to other reasons, but the true explanation seems to be that with our frequent and excessive rains in the spring and early part of the growing season, the crops find sufficient moisture near the surface and develop a superficial root system. When the drought comes and the surface soil loses its moisture, the crop suffers because it is not provided with a deeper root system. In the far West, where spring and summer rains are rare, the crop is planted upon a soil which is always uniformly moist to a considerable depth, and with no subsequent rains the plant develops a deeper root system, which enables it to survive long periods of drought that would seriously affect it if it was subjected to frequent showers during the early period of its growth. It is a familiar fact that a lawn which once is watered during a dry season will have to be frequently watered or the grass will suffer oftentimes more than if it had not been watered at all. The first watering induces a superficial

root development, which must be supplied frequently with water. What can be done to prevent this tendency and to overcome the effect of droughts is a subject of the utmost importance, and one which will receive the attention it deserves.

I know of no line of work which has been undertaken of more fundamental importance than the work of the division of soil management, nor one which offers a promise of more valuable results to the agricultural interests. When these fundamental problems have been established they will give a reliable basis for the development of better methods of cultivation, fertilization, and of cropping.

Tobacco Investigations.

Since my last report the commercial success of the shade-grown Sumatra tobacco in the Connecticut Valley has been assured. Last year 41 acres of shade were erected by 13 farmers, cooperating with the Department of Agriculture, 35.88 acres of which were planted to Sumatra and the rest to the ordinary Connecticut Habana seed tobacco. The expenses of this work, amounting on an average to about $657 per acre, were borne by the farmers, the Department of Agriculture exercising supervision over the work and directing all the operations. The Department also reserved the right to offer the tobacco for sale, for the purpose of obtaining official information as to the commercial value of the product, which it would have been impossible to obtain if the tobacco had been disposed of at private sale. Accordingly, after it had been carefully cured and assorted under the direction of the Department's experts, the tobacco was catalogued and offered for sale at public auction at Hartford, Conn., on May 1, in accordance with the wishes of the various growers. A committee of tobacco brokers, with Hon. E. Stevens Henry, Congressman from the First district of Connecticut, as chairman, was invited to cooperate with the Department in the management of this sale. The committee consisted of Messrs. M. E. Flaherty, New York; Steven G. Ruth, New York; S. M. Seymour, New York; Capt. Darius Ferry, New York; James Ertheiler, New York, and Herman G. Vetterlein, Philadelphia.

The committee took a great deal of interest in the work and rendered very efficient services in the matter. Credit is due them for the time and expense which they personally contributed in the interest of this investigation and of the Connecticut growers.

The tobacco was offered for sale at public auction from sworn samples. As each grower wanted to sell his crop independently of the others, many of the bales had mixed sizes and even mixed grades. Furthermore, the leaf had not been tried by the manufacturers, and there was some hesitancy in bidding on this account. This accounts for the considerable variation in the price. It is estimated by the Department's experts, as stated in Bulletin No. 29 of the Bureau of Soils, that the tobacco cost on an average, baled and ready for market,

about 51½ cents a pound. The ordinary tobacco grown in the open fields in Connecticut brings on an average from 18 to 20 cents a pound. The average price paid for the shade-grown tobacco was $1.20 a pound, the price varying from $2.80 per pound for the best to 25 cents a pound for some of the mixed bales. The crop that brought the best price sold for $1.63 per pound on the average.

On the whole, it is believed that the auction sale was very satisfactory, but it is thought that the prices for this year's crop will be even higher, as indicated by the great demands for the product and by the favorable reports that are coming in from the cigar manufacturers who have used this leaf. The aggregate of the prices obtained at the auction shows a very handsome financial transaction.

The total area cultivated in Sumatra tobacco in 1901 was 35.88 acres. There were produced 51,308 pounds of cured tobacco, and actually baled 41,046 pounds, the difference being the loss on account of fermentation, trash, and filler leaves. The total cost of production, estimated at $657.17 per acre, was $23,579.26. The total value, estimated at $1.20 per pound, the average price obtained at the sale, was $49,255.20. This gave a net profit to the growers of $25,675.94, or 108.8 per cent. This does not include the cost of the land, barns, or warehouses, nor the interest on the investment so represented, but does include the whole cost of the shade, the framework of which is expected to last for from five to eight years. The profits per acre were as follows: Of baled tobacco, exclusive of trash, there was obtained 1,144 pounds per acre; the cost of this was approximately $657.17 per acre; the value, at $1.20 per pound, was $1,372.80, giving a net profit of $715.63. The best crop, which was raised on a lot of about 6 acres, gave a yield of 1,026 pounds per acre; the estimated cost was $649.86 per acre; the total value at $1.63 per pound, the average price obtained for this lot, was $1,672.38, giving a net profit of $1,022.52 per acre.

A great deal of interest has been felt, of course, as to the experience of the cigar manufacturers in handling this product, and the reports have been anxiously awaited. Very favorable notices have been published from time to time in the press and various trade journals, but in order to obtain direct and reliable information the Department addressed three of the largest cigar manufacturers in Hartford and vicinity, who it was known had purchased some of the stock at auction. In reply to these inquiries the following letters were received:

HARTFORD, CONN., *August 25, 1902.*

DEAR SIR: I beg to inclose you my foreman's report on shade-grown tobacco. (Mitchelson, 1901 crop.) The appearance of the crop in the sheds this year shows an improvement in color; there are more brown leaves, with less of the green cast so much in evidence last season. I hope the growers will make a special effort to raise shade-grown wrappers only on land that produces a sure burn. This type is only for wrappers, and a perfect burn is quite important.

Respectfully, yours, CHARLES SOBY.

Report to Charles Soby by E. M. Roszelle, foreman of factory, on test of shade-grown wrappers, Mitchelson crop, 1901.

Shade-grown wrappers, as tested under my supervision, will show some remarkable results as to yield of product and of the effect on quality of cigars by their use. By comparison with a like quantity of imported Sumatra wrappers as to yield in product, the difference in favor of the shade-grown wrappers is apparent to all.

Our test on one bale of shade-grown wrappers of 155 pounds net weight shows the enormous yield of 85,432 cigars, an average of 29¼ ounces per thousand. The same stock, as prepared by the tobacco strippers for the workmen's tables, shows an average of 27¾ ounces per thousand, which includes waste of all descriptions in the stripping room. Our tests on imported Sumatra wrappers of same weights show an average of 70,000 cigars to the bale, with greater loss in stem and wrappers in preparation.

In casing for the stripping room, the shade-grown wrappers take the water very nicely and show no bad effects, the wrappers being much easier handled by the caser than Sumatra. It does not become matted, but separates without any trouble.

The workmen find no difficulty in working the leaf, as no loss of time or product is caused by the use of shade-grown wrappers. The leaf is very elastic, and works well by comparison with other wrappers tested by us.

The quality of the shade wrappers is excellent, and blends very well with our binders and fillers. I am positive the cigars are improved in quality by its use. I find no trouble with the burn of the leaf in my daily inspection of the wrappers. I have failed to find a single leaf that does not burn perfectly.

As to color, they are not perfect in all respects. I find that about 91 per cent of the stock tested by us was good in color.

All things considered, the points in favor of the shade-grown wrappers may be summed up as follows:

First. Greater yield in product.

Second. Leaves are lighter in weight and color.

Third. Less waste and cost in preparation for workmen's tables.

Fourth. Less loss in weight of stems as compared with Sumatra wrappers.

Respectfully, yours,

E. M. ROSZELLE.

SUFFIELD, CONN., *September 4, 1902.*

DEAR SIR: It is but right I should advise you as to the working quality of the Connecticut shade-grown Sumatra tobacco, from which I purchased at the sale in Hartford, Conn., on May 1, 1902, 20 bales.

I have worked in my cigar factory since then quite a proportion of this tobacco, and I am more than pleased with the results. It is finer and better in every way (in color, texture, and flavor) than the imported Sumatra, and the wrapping qualities are enormous; 20 ounces will easily wrap 1,000 5-inch cigars. I am confident that when cigar manufacturers come to work this tobacco the demand will be far greater than the supply.

Very respectfully, yours,

L. P. BISSELL.

HARTFORD, CONN., *September 1, 1902.*

DEAR SIR: We have been using the shade-grown tobacco, which we bought at the auction held in this city last May, to some extent all summer. We are using it on a small "perfecto" cigar. It wraps with about 2 pounds to 1,000 cigars. The colors have improved a great deal since last spring. It burns well and tastes well. So far we have not had any complaints from any of our customers about the cigars with this wrapper. We should like it better if it had a little more body, because then it would stand the cold weather better.

Very truly, yours,

LEICHKE & PLETCHER.

In another communication Messrs. Leichke & Pletcher report that they could wrap 1,000 of their 5-inch cigars with 1 pound 10 ounces of the leaf, while Mr. Bissell, of Suffield, reported that he was using 2 pounds of the shade-grown leaf to wrap 1,000 of his cigars, and that with a bale of wrappers weighing 140 pounds 102,000 cigars were wrapped. It can safely be said, therefore, that the leaf has successfully stood the test of the cigar manufacturer.

Even before the tobacco was ready for the market or the results of the sale announced preparations were made by the growers to largely increase the acreage. Although the commercial success of the investigations had been fully demonstrated, the industry was so important and involved such an expenditure of labor and capital that, at the earnest solicitation of the growers, the Department's experts were left in the Connecticut Valley for another year to advise with such of the growers as needed their assistance. At the present time the Department is advising and instructing in this way 38 growers in Connecticut and Massachusetts, cultivating 645 acres of shade tobacco. The efforts of the Department in this direction seem to be very highly appreciated.

The season has been distinctly unfavorable. There has been an unprecedented amount of rain, falling in very severe showers, and the season as a whole has been characterized by cool spells and especially cool nights. This has apparently not affected the crop materially, as it is the general belief that the crop at this time is better than that of last year. The season has also been one of unusually severe wind and hail storms. Considerable damage has been done to the outside crops in certain sections of the State, but no damage has been done to the shaded tobacco, as the cloth has protected the leaf from all injury from hail. The damage from wind has also been exceedingly light. The winds have been so strong in places that the posts have been lifted from the ground, but the damage to the tents has been exceedingly slight and there has been practically no injury to the crop.

As to the financial prospects for this year, the following estimate is based on the experience of last year: There are about 700 acres of tobacco under shade, which will produce about 1,000,000 pounds of cured tobacco, or 800,800 pounds of baled tobacco, exclusive of trash. The total cost, at $657.17 per acre—the average for last year—will amount to $460,019. The total value of the baled tobacco at $1.20 per pound, the average price obtained at the auction, will be $960,960. The net profit will be $500,941. It is believed, however, that the cost per acre will be considerably less than last year, and that the price per pound will be greater. The Department believes that this industry has been successfully placed upon a commercial basis, and that there will be a considerable increase in the crop grown next year. We have demonstrated our ability to produce a leaf which is desired

by our people, and for which about $6,000,000 have annually been expended in foreign countries. The demand for this product has always been greater than the supply, and prices have been maintained in a remarkable manner. It may seem strange to some that manufacturers can afford to pay such prices for wrapper leaf, but even at $3 a pound for leaf that will wrap at the rate of 2 pounds to 1,000 cigars, the cost of the wrapper is about six-tenths of a cent. Even at such prices the leaf can profitably be used on a 5-cent cigar. There is so little waste to the leaf, it yields so well in the manufacture of cigars, the color is so uniform, and the grading is so perfect that manufacturers find it actually cheaper to pay $3 a pound for such leaf than to buy domestic wrappers at an average of 20 cents a pound or selected domestic wrappers at from 50 to 60 cents.

SUMATRA TOBACCO IN LOCALITIES OTHER THAN CONNECTICUT.

Considerable interest has been shown, of course, in the possibility of extending the Sumatra tobacco industry to other localities and to other States. It was predicted, as a result of the soil survey of the Lancaster area, Pennsylvania, that the Sumatra tobacco could be successfully grown under shade on the narrow strip of Donegal gravelly loam bordering the Susquehanna River. Experiments carried on this year by the Pennsylvania experiment station, in cooperation with this Department, in growing Sumatra tobacco under shade on a small tract of about 1 acre appear to have demonstrated the correctness of this prediction. The crop has been harvested and, judging from the product in the curing shed, it is of good quality. It is not believed by the Department experts that equally successful results will be attained on other soils in this area.

In response to demands from one of the principal New York tobacco districts, a soil survey was made this season of the Big Flats area in the Chemung Valley, New York. As a result of this survey, it is not believed by the Department experts that any considerable success will attend the growing of Sumatra tobacco on the soils of that locality, with the exception of a very small area of not exceeding 10 acres, where an experiment has been actually carried on by a gentleman familiar with the soils of the Connecticut Valley, who selected this tract because it represents the type of land that is found in Connecticut.

A soil survey has also been made of a considerable area in the Janesville area, Wisconsin. Two experiments of growing Sumatra tobacco under shade have been tried there, and the results at the time of harvesting indicate a fair degree of success. The Department does not believe, however, that the product of the soils of the Janesville area will approach in quality or in value the product raised in the Connecticut Valley. It is not intended by this to imply that the leaf can not be successfully grown in the Wisconsin area, but from

the information at present obtainable it does not seem that the product will be of equal value with that of the Connecticut Valley. The Department is still of the opinion that the conditions essential for the raising of a high grade of Sumatra tobacco are limited in extent and can be closely defined by the soil survey.

INVESTIGATIONS IN THE FILLER TOBACCO DISTRICTS.

The experiment of raising Cuban filler in Lancaster County, Pa., last year was not a success. It is believed, however, that this was due to a misunderstanding with the growers and a consequent lack of care and thoroughness in the cultivation and handling of the crop. While it was thought that these investigations should not have been interrupted or discouragement felt at the lack of success in this first attempt, it was impossible for financial reasons to maintain a party in Pennsylvania, as a promise had already been given to start the work in Ohio. Accordingly, more careful plans were made, and a crop was grown on the upland soils of the Miami Valley, under the direct and immediate supervision of the Department's experts. This crop has just been harvested, and it is too early to determine the value of the product. From other crops that have been raised in the locality from imported Cuban seed, which have been fermented by our experts and thoroughly examined, it would appear that a desirable type of leaf, approaching very closely the imported Cuban leaf, can be produced. The quality of the leaf is not at present all that could be desired. There is something harsh about the aroma, but it is thought that this can be considerably toned down, if not entirely eliminated, by thorough methods of cultivation and fermentation.

The tobacco situation in Texas has been thoroughly studied, and it is thought that a desirable leaf will be produced there by careful methods of cultivation, fermentation, and assorting.

CONFERENCE OF TOBACCO EXPERTS.

A conference has recently been held in Washington by the tobacco experts of the Department to consider the general situation and to advise as to the methods to be pursued during next season, especially in Ohio and Texas. Arrangements have been made for experimentation during the coming crop season with good prospects of producing fine filler tobacco in these two States. Leaf has been grown that can not be distinguished from the imported Cuban when properly fermented.

SALARIES OF TOBACCO EXPERTS.

The demand for experts to carry on tobacco investigations has been so great that Mr. Floyd, although receiving as high a salary as, in justice to other officers of departments, it seemed possible to pay him,

and who at the time was getting a larger salary than the Chief of the Bureau who was directing the work, was induced to leave by the offer of compensation about three times as great as he was receiving in the Department. Quite recently his successor has been approached in the same way by a corporation intending to operate in the Connecticut Valley, and it is likely that he will leave the Department to accept a much more remunerative position outside. Two years ago I had to note the loss to the Department of a gentleman who had made some important discoveries in tobacco fermentation, and who was called to Japan at a salary about four times as great as he was receiving in the Department.

It is gratifying to feel that the Department's experts are looked upon with such favor in the commercial world, but these experts are so difficult to obtain, and to train them requires so long a time, that the Department is very greatly embarrassed when they are thus removed because of lack of opportunity to pay them what their services are worth in commercial lines. As this work has been developed by the Department, it seems strange to think that the very success of the work is hindering, if it does not prevent, the successful extension of the investigations.

EXTENSION OF THE TOBACCO INVESTIGATIONS.

The tobacco investigations of the past two years have been carried on with three field parties, at a cost of about $5,000 each, or an aggregate of $15,000 per annum. On account of the great success of this work, and the extraordinary interest taken in its extension to other areas, I recommended last year that the appropriations for the Bureau of Soils be increased so that the allotments for this work could be made sufficient for seven parties of tobacco experts. The appropriations as passed, however, did not allow of this increase, and the allotment this year has been the same as for last. The demands for the services of these tobacco experts have been very great, and I would recommend that three additional parties be organized for work in Pennsylvania, Wisconsin, and North Carolina. This will mean an increase of $15,000 in the allotment, making in all the sum of $30,000 for the tobacco investigations. I feel that the economic results of the work so far done, and the lines of work that are at present being developed, fully justify this recommendation. The reports from the Connecticut Valley alone indicate that nearly $1,000,000 worth of Sumatra tobacco will be grown in the State this year. This has largely increased the price of land; has furnished a market for thousands of chestnut posts from adjacent ridges which have lain idle and unproductive for years; has given employment in a healthful occupation and at remunerative wages to large numbers of men and women; has brought about the production of millions of square yards of cloth by the cloth manufac-

turers, and has opened up the possibility of an enormously profitable industry for the future. It would seem that this experiment alone would fully justify the increase in the allotment that is asked, but when it is stated that we expend annually $8,000,000 for filler tobacco which the experts of the Department believe can be produced in this country, it but adds to the justification of the request for the larger allotment for this work.

Drainage Investigations.

During the year an investigation was started as to the possibility and practicability of reclaiming the soils in the arid regions which have been injured by seepage water and the accumulation of alkali. In cooperation with the Utah experiment station and Mr. C. D. Swann, of Salt Lake City, who has donated land for the purpose and has paid a considerable portion of the field expenses, a tract of 40 acres of alkali land near Salt Lake City has been thoroughly underdrained with tile. This work has been under the immediate supervision of the Department experts, and the work of reclamation is to be under the joint charge of the Department and the Utah experiment station. It is too early yet to speak of the results of this work. It is being watched with the greatest interest by the people of that locality, and it is believed that if the investigation is a success ample capital will be forthcoming to carry on extensive operations in the reclamation of alkali tracts and the prevention of damage to irrigated lands from seepage waters. This work is under the immediate charge of Mr. W. H. Heileman.

Arrangements are being made for the carrying on of similar work at Fresno, Cal., and it is proposed to extend this work to a typical area in Montana and possibly in Arizona, to demonstrate to the people that these unfavorable conditions can be economically controlled. It is estimated that land values in the immediate vicinity of Salt Lake City will be increased at least $3,000,000, exclusive of the cost of reclamation, if they can be reclaimed from the alkali with which they are now impregnated, and it is believed that equally great benefits will result in other portions of the arid West.

In furtherance of this work, Mr. Thomas H. Means, of the Bureau of Soils, has accompanied Mr. Thomas H. Kearney, of the Bureau of Plant Industry, on a trip to Algeria and Egypt to study the treatment of alkali lands, the use of alkaline waters in irrigation, the methods used in the reclamation from seepage water and alkali, and the crops adapted to alkali soils. This investigation has not yet been completed, but sufficient has been heard from the party to indicate that conditions even more serious than those existing in the arid regions of this country are under perfect control, and it is believed that the information thus gathered will be of great benefit to the people of Western America.

BUREAU OF CHEMISTRY.

Examination of Imported Food Products.

The Bureau of Chemistry has continued the examination of imported food products for the purpose of determining if they contain any added substances injurious to health. The Bureau has also collaborated with the Treasury Department in controlling the polarizations of imported sugars and in determining the character of certain other imported products in order to classify them for dutiable purposes. Investigations of the adulteration of food products is one of the important studies of this Bureau, and the work has been especially devoted during the past year to the adulterations of olive oils, with the object of securing an honest market for the olive oils of domestic manufacture which are compelled to compete with cheaper and adulterated oils.

Investigations of Forest Products.

Important investigations, in cooperation with the Bureau of Forestry, have been conducted by this Bureau in connection with economic forest products such as tannin, gums, rubbers, and wood pulps.

Laboratory Tests of Road Materials.

The road material laboratory of this Bureau, which was established in December, 1900, in cooperation with the Office of Public Road Inquiries, tests road materials of all descriptions, free of charge, for practical road builders throughout the country.

Those interested in the construction of a road have only to send samples of their available materials to this laboratory and have the road-making qualities of these materials determined. In the case of materials for macadam roads, the resistance of wear to rock, its cementing value, hardness, toughness, and absorptiveness are determined. After such tests are made it is possible to predict which material will give the best practical results under a given traffic.

Only practical road builders of much experience realize the large amount of money which can be wasted through an improper selection of material. There are generally several materials available in every locality, and the difficulty of selecting the most suitable for a particular road is evident. The only way a proper selection can be made within a reasonable time is by means of physical and chemical laboratory tests.

The laboratory is now equipped for the testing of road materials of every description, as well as cement and concrete for drains and highway bridges.

The large number of samples received from all parts of the country, including our island possessions, attest the value which practical road builders place upon these laboratory tests.

Investigations in the Sugar Laboratory.

Important investigations looking to improving the quantity and quality of table sirups have been made in the sugar laboratory, and critical studies have been undertaken of the influences tending to produce the maximum content of sugar in beets, melons, and other sugar-producing plants.

Studies of Insecticides.

Studies of the various insecticides in common use in agriculture have been conducted with the object of determining the value of their constituents. Since arsenious acid is one of the most common constituents of insecticides, an investigation has been commenced to determine the effect of this body upon the foliage of plants and to ascertain whether any of the arsenic thus applied for insecticidal purposes is found in the food products derived from the plants which have been thus treated.

Study of Environment of Chemical Composition of Cereals.

Extensive collaborative work has been instituted with many of the agricultural experiment stations for the study of the effect of environment on chemical composition of wheat and other cereals and to ascertain the most reliable methods for judging the quality of the soils from their chemical constitution.

Study of Waters used in Irrigation.

The study of the character of waters used in irrigation, especially in the growing of rice, has been begun, to determine the quantity of injurious salts which these waters may contain and the quantities of this water which may be safely used upon the fields.

Establishment of New Laboratories.

New laboratories have been established to study the effects of preservatives and other added substances upon the health of the consumer, with the view of determining the character and amount of such substances which may be safely used in such foods without injury to public health.

A contract laboratory has also been established for the purpose of ascertaining the quality and quantity of materials purchased for the Department of Agriculture and other Departments of the Government, and to establish specifications for such supplies, based on physical and chemical properties.

A drug laboratory has been established also to study the character, standard, and adulteration of drug products. The larger portion of the drugs in commerce are of agricultural and horticultural origin, and

the necessity of securing purity and conformity to standards in articles of this kind is evident. Dangerous narcotics and poisonous substances should not be indiscriminately sold, and drugs intended for ordinary therapeutical purposes should conform to the standards laid down by competent authorities.

Work for Other Departments.

The Bureau of Chemistry is constantly increasing the services rendered to other Departments of the Government. This is especially true in respect of its collaborative work with the Treasury Department in controlling the polarizations of sugars, and in assisting the appraisers in the classification of other imported articles where the rate of duty depends upon chemical and physical characters.

Extensive studies have also been conducted for the Post-Office Department in regard to the character of canceling inks and stamps used therewith. Similar investigations have been conducted for the Bureau of Engraving and Printing in regard to colors used for printing bank notes, bonds, and other Government securities.

All of this work is of a nature which is highly important to the public service, and is conducted largely on agricultural products.

DIVISION OF ENTOMOLOGY.

Work on Insects from Abroad.

THE SAN JOSE SCALE AND ITS ASIATIC LADYBIRD ENEMY.

In the report of last year attention was called to the exploration which was being conducted by the First Assistant Entomologist, Mr. Marlatt, in Japan and China, to discover, if possible, the native home of the San Jose scale (*Aspidiotus perniciosus*), and also to find native parasites and enemies which might be imported to control or at least check the damage which is done by this insect in the deciduous orchards of this country. Mr. Marlatt's exploration of Japan demonstrated that the San Jose scale is not a native of that country, as many of our entomologists had supposed, but, on the contrary, that it had come to Japan comparatively recently on imported nursery stock, and been thus spread somewhat generally over the islands of the Japanese Empire. Subsequent to the time covered by the report for 1901, viz, in the late summer and fall of that year, Mr. Marlatt extended his explorations to China, examining the coast region from Shanghai northward to Pekin. The evidence from native fruits and wild plants in the region about Pekin and south of the Great Wall established very clearly that the original home of the San Jose scale was in this region.

In brief, this scale insect was found on wild haw apples, native

crab apples, and native pears grown in the region indicated where no foreign fruit stock had ever been introduced. Furthermore, it was found in scattering numbers everywhere, just as one would expect in the native home of a pest of this sort where it is normally kept in check by natural enemies. There can be no doubt that at last its original home has been located. It was probably brought to America many years ago on imported Chinese flowering peaches or some other ornamental or flowering shrub from this region, having first appeared in the gardens of a great importer of ornamental and other plants in San Jose, Cal. A very interesting fact in connection with this discovery was the finding in this same region of a ladybird which preys on the scale insect naturally and seems to be the principal agent in preventing its often becoming very abundant and injurious. This ladybird (*Chilocorus similis*), a European and Asiatic species, in China feeds naturally on the San Jose scale and related forms, as also on the white peach scale, a very troublesome pest, which has recently gained foothold in our Eastern and Southern States. Several shipments of this beetle were made by Mr. Marlatt, some from Japan and some from China. Unfortunately, all perished but two, this mortality resulting from the long confinement of the six or seven weeks' trip from Asia and the unfavorable conditions under which they were kept in Washington during the winter.

From the two surviving individuals more than 2,000 beetles and larvæ are now on scale-covered trees on the Department grounds. In addition to these, shipments of some thousand beetles have been already made to other points in the East, a number of experiment station entomologists having expressed a desire to assist in the work of propagating, distributing, and establishing this useful ladybird. This importation promises most flattering results at present. It is, however, still an experiment, and what the ultimate benefit will be can only be determined after a two or three years' test. We hope to establish this ladybird in this country and to get from it some of the good results, at least, which it evidently accomplishes in China and Japan. It probably will not render it unnecessary in the future to occasionally spray or otherwise treat infested trees in commercial orchards, but it probably will be of very great assistance in keeping in check the San Jose scale in the thousands of gardens and small orchards of individuals who have no commercial interest at stake and who would not, ordinarily, take any means to keep this scale insect from multiplying on their trees, thus forming centers for contagion.

IMPORTATIONS OF OTHER BENEFICIAL INSECTS.

The preliminary attempts to introduce the European enemies of the gipsy moth have been continued. The difficulties attending the importation of the predaceous beetles from Europe to America are consid-

erable, and to get them established in this country will demand the careful cooperation of agents or interested individuals on the other side.

The black scale of the orange is the most destructive, perhaps, of all the orange pests in California, and the South African parasite of this scale insect, which we have been endeavoring to establish in California for the last year or two, still gives promise of ultimately becoming a fixture and doing the good service in our Western orange districts which it now does in South Africa and in Italy. The history of this importation was given in my report of last year. A recent letter from Mr. Alexander Craw, who is looking out for this experiment in California, reports that the parasite is breeding abundantly. With a beginning of only two female insects kept in captivity, he had sent out to different localities up to July of this year (1902) 25 colonies.

The very important European parasite of the larger scale insects such as the Lecaniums and mealy bugs (*Eusteria scitula*) seems on the way to be successfully established in California. It is believed that the introduction of this insect into our citrus and olive districts will be of the greatest advantage to the growers of these fruits. With the cooperation of Mr. Craw, the horticultural quarantine officer, and Mr. Ehrhorn, of Santa Clara, these insects have already been liberated in Santa Clara, Los Angeles, and Niles, Cal., and the outcome of this effort at the introduction of a useful insect will be watched with interest, and the utmost care will be taken to bring it to a successful issue.

Another foreign insect promising great usefulness in a different direction, imported during the past year, is the European ladybird (*Coccinella septempunctata*) sent from Hungary through the kindness of Professor Sajo. These ladybirds feed on plant lice, and should be an efficient aid in controlling the destructive insects of this class which infest cotton, peas, melons, and other vegetables, and the fruits. Some of these insects have been sent to Mr. Craw, in California, where they give promise of becoming established; others to various Eastern experiment station entomologists, and they have also been colonized in the District of Columbia. Another ladybird (*Leis conformis*), a plant-lice feeder also, was imported from Italy and liberated in California. A further importation of this species may be necessary to effect its establishment here.

This entomological work of an international character has not been altogether one sided. In other words, while we have been importing foreign insects and have been receiving a good deal of gratuitous assistance by entomologists abroad in this work, we have paid our debts, to a certain extent, by sending to foreign countries some of our beneficial insects. The extraordinary success in preventing damage from the white scale, once a great orange pest in California, by the introduction of the Australian ladybird, has been duplicated, as made evident

in former reports, in many foreign lands, notably South Africa, Portugal, and Egypt. During the last year colonies were sent from California, at our request, to Dr. Antonio Berlese, Portici, Italy, where this same white scale had established itself. Recent reports indicate that this exportation has proved to be another of the series of successes which has attended this insect wherever it has been sent to work against its notable scale-insect host. A colony of this ladybird has recently been sent, by request of the local board of agriculture, to Papeiti, Society Islands. We have also had sent, through the kindness of Mr. Craw, various beneficial ladybirds to the Bermuda Islands to assist in keeping in check the noxious scale insects occurring on those islands.

The South African Grasshopper Fungus.

The report of last year noted the beginning of an experiment to determine the effectiveness of the African grasshopper fungus as a means of destroying various forms of destructive locusts. The experiment has been continued the present year and much extended, the intention being to give this fungus a thorough and practical test to demonstrate whether it can really be counted on as a means of controlling the locust or not. The number of experimenters last year during the entire season was 223. During the summer of 1902 cultures of the fungus were sent to nearly 1,000 individuals, not including the perhaps even greater number of cultures which have been locally prepared by various individuals, and especially by Prof. C. P. Gillette, of the Colorado State Agricultural College, who has taken charge of the culture preparations and their distribution in his State. These cultures have been sent out to 25 different States and Territories. Results have not yet been tabulated, but some successes have been reported. It now seems probable that very great reliance can not be placed on this fungous disease. Either it does not work with our grasshoppers as readily as it does with the South African locust or our climate makes our species of grasshopper more resistant or the fungus less operative.

The Fig Fertilizing Insect.

As a further report of progress on the introduction and establishment of the fig-fertilizing insect in California referred to in previous reports and especially summarized in the report for 1901, it may be said for the year 1902 that thousands of figs containing the insects successfully withstood the winter climate of California, and an unlimited amount of fig insects was available at the proper time for caprification in the spring of 1902, resulting in the production of some 50 tons of Smyrna figs in the sole commercial orchard in existence at present, that of Mr. George C. Roeding, at Fresno. It was further found that

the fig insect successfully hibernates at Niles, Cal., and there is now no longer any danger of its dying out. In other words, the entomological problem of Smyrna fig culture in America is solved, and what remains to be done belongs rather to the domain of horticulture, namely, the introduction of more caprifig trees, improvement in the methods of curing and drying the fruit, and the determination of the regions throughout the arid West suitable to the industry. The practical success of Smyrna fig culture in California is now only a matter of time. In a very few years Smyrna fig orchards will be in bearing in many places in California and doubtless in other Western States where climatic conditions are favorable.

As stated in the report for 1901, Mr. Roeding spent nearly a year in Smyrna studying the methods of fig culture in that country under a commission from this Department. Much valuable data was obtained, for the most part appertaining to the horticultural side of the problem. The future of this industry, which promises to be one of the great ones of the arid region of the West, becomes more promising every year.

Work on the Mexican Cotton Boll Weevil.

The work on the Mexican cotton boll weevil reported in 1901 has been continued, and has the present season been given a very practical status by means of the specific appropriation by Congress for the purpose of $20,000. A field experiment is being conducted on two cotton plantations, one of 200 and the other of 125 acres, under the control and direct management of the Entomologist, to demonstrate that by proper methods the damage from the boll weevil can be so reduced as not to be a serious menace to the production of this important staple in the region in Texas already invaded by the weevil.

In spite of the delayed beginning this year, owing to the late date at which the appropriation was available, the entomological side of this field experiment has been thoroughly successful, and the weevil has been practically eliminated from the plantations under Departmental control. The cotton season, however, in Texas has been the most disastrous one climatically in twenty-five years, and this will prevent the cotton yield on these plantations coming up to the average, the lessened yield, however, in no wise being chargeable to the boll weevil. It is urged that the means for continuing this investigation be provided, as it is one of the very greatest importance for the whole cotton industry of the South. There can be very little doubt but that ultimately the Mexican boll weevil will spread to the adjoining State of Louisiana, and thence across the cotton belt east of the Mississippi, and is capable of becoming one of the most destructive insects in America. If, on the other hand, the Department can demonstrate by practical field work that the weevil can be controlled, as indicated by

the preliminary experiment this year, it will have the effect of influencing planters generally, in Texas and elsewhere, to adopt the same methods, and thus avoid much of the loss which this insect threatens.

In this connection, reference may be made to the Egyptian cotton which, by newspaper report and otherwise, has been somewhat exploited as immune to the boll weevil. This misconception is capable of doing harm, inasmuch as the Egyptian cotton is rather more subject to weevil damage than the variety of cotton ordinarily grown in Texas. In a field of Egyptian cotton near San Antonio practically every square was punctured by December 12, and the weevils had begun to attack the bolls, half of which had at that date been destroyed. The fact that Egyptian cotton seems to be later in maturing than the smaller American plant causes it to be much more liable to damage by the boll weevil. The same conditions with Egyptian cotton were also noted on another plantation.

In the fall of 1902, after the close of the active field work of the season, the agent in charge made some very desirable explorations in Mexico, more especially to investigate the subject of natural enemies. Important biological and life history studies have been prosecuted in Texas and the present range of the insect has been carefully mapped.

Work on the Codling Moth in the Northwest.

The work done on the codling moth in the Northwest has been continued with very satisfactory results. A detailed report of this work has been published. The work the present year has been of a very practical character, a successful orchard demonstration having been conducted which showed that it is possible to prevent much of the damage which is now annually suffered from the codling moth.

Work on Insects Damaging Forests.

During the first half of the year several important investigations were made of forest insect depredations by Dr. A. D. Hopkins, of the West Virginia experiment station, who was employed at the request of Mr. Gifford Pinchot, of the Bureau of Forestry, as a temporary agent of the Division of Entomology for the purpose. Great loss of pine timber, to the amount of more than 600,000,000 feet (board measure) in the Black Hills Forest Reserve, has resulted from the work of a bark-beetle mining under the bark of living trees. Numerous facts have been determined relative to the life history of this insect, and it has been possible to detail practical methods, the adoption of which will largely decrease future losses. A report of this investigation has been published.

Another investigation was of hickory and other forest trees near Genesco, N. Y. The hickories had been killed by a bark beetle, the damage having already gone beyond repair for most of the region

invaded. Had an earlier report of the difficulty been made to the office, a prompt application of known methods of control would have prevented this loss. A special report of this investigation will soon be published. The damage occasioned by this hickory bark beetle seems to be quite general throughout the Northern United States, and will receive considerable attention in the future, especially now that Dr. Hopkins has been regularly appointed to the Division of Entomology as expert in forestry insects. A study of the insect enemies of Eastern, Southern, and Western pine forests has been begun to determine, if possible, the primary causes of the serious insect damage now being done to pine timber of western North and South Carolina, northern Georgia and southern Florida, the white pine or silver pine of the Pacific slope, the Monterey pine, California, and the pines of Arizona and Colorado. The regions designated have been given a preliminary survey to determine existing conditions, and it is expected that by the close of the next fiscal year it will be possible to have a report ready for publication on the principal pine insects of North America, which will include brief popular descriptions of the more important insects, with illustrations, and recommendations for preventing losses.

Work on Scale Insects.

The important work of the year on scale insects has been the investigation of the San Jose scale in China and Japan, referred to under "Work on insects from abroad." The experimental work on the San Jose scale at home has been continued, and a circular (No. 42) describing the methods of controlling this insect has been revised to include the results of the latest information on methods of treatment.

The Division of Entomology of this Department is looked upon as the chief source of information upon scale insects, few of the experiment stations having collections or literature sufficient to enable the determination of specimens; hence much work is done every year in determining material for station entomologists and for private individuals throughout the country. In addition, many large collections of scale insects have been received for study and determination from foreign countries, notably from Australia, New Zealand, the Bermudas, and Italy.

In the course of the trip of exploration made by Mr. Marlatt in Japan and China, Java, and other countries in the Orient, a particular study was made of the scale enemies of citrus and other fruit trees, and large collections of this class of pests were brought home from the countries visited. The knowledge gained from this study will be of great practical importance. It will acquaint us with the scale pests of these countries, which are being brought into closer commercial relations with the United States, a knowledge which is desirable because these

insects are more apt in the future than in the past to reach our shores through importations of fruit trees and ornamental stock. The scale insects of foreign countries are perhaps the most important pests to be considered in all quarantine and other operations looking to the protection of our growers from foreign invasions, since these insects live for the most part attached to the bark of trees and are much more apt to be brought in with plants than are other insects.

Insects Injurious to Shade Trees.

Many complaints of insects affecting shade trees have been received in recent years, and among these are several important foreign species, which have been under investigation during the year.

Insects Injurious to Truck Crops.

The studies already under way on destructive insects affecting truck crops have been actively followed up, and an extensive report on the principal insects that have recently been injurious to vegetable crops has recently been issued. A number of insects injurious to leguminous food crops received considerable attention, and the new facts discovered in the life histories of some of them are of value in suggesting means of control.

Work on Insects Injurious to Stored Products.

Certain insects of this class are increasing their ravages. The Mediterranean flour moth, which is the most troublesome of all insects that are harmful in flouring mills, was reported as injurious in mills in new localities in California, and in Michigan, Wisconsin, and Minnesota. The Angoumois grain moth has also increased in injuriousness in a number of States, particularly northward and in California.

The cigarette beetle has been very destructive during the past season. Thorough investigations were conducted with a view to find a remedy for this pest, and much of value was learned and published.

An exotic cabinet beetle did much injury to silk in New Jersey and to domestic tanned leather in New York City, its introduction being traceable to the introduction of foreign hides. In the treatment of the insects which affect stored products, recent experiments with hydrocyanic-acid gas indicate that this remedy may, in course of time, be found more valuable than the bisulphide of carbon usually employed in the treatment of many such insects.

Work on Insects in their Direct Relation to the Health of Man.

Insects as conveyers of disease to human beings have been the subject of special research by the Entomologist for the past three years. A popular article on this topic was published in the Yearbook for

1901, and has since been reprinted in more popular form. During the past summer many inquiries have been received requesting information and advice on the subject of mosquito and fly control, and these have been answered by the publication in question and by specific advice. This investigation is being actively prosecuted; the field is a very large one and of the greatest importance. While perhaps the principal insects responsible for the transmission of disease have received study, there remains very much yet to be learned of them, and, furthermore, the Entomologist is in frequent receipt of new material from this and other countries, and is constantly discovering new facts bearing on this general problem.

Unclassified Work on Injurious Insects.

During the fiscal year investigations were taken up on supposed insect damage to cocoanut and other palms in Cuba, Florida, and in British Honduras. An article on the principal insects which act as disseminators of the trouble locally termed "fever," and due to a fungous disease, includes suggestions for methods of prevention of the dissemination of the disease.

Insect Determinations.

An important line of work is the identification and maintenance of records of the habits of injurious insects received from correspondents, field agents, and others to serve as a basis for determining the best means of controlling them. During the fiscal year 226 species not hitherto studied at this Department received more or less attention, and the catalogue number of biological series thus studied now reaches 9,667.

The time of two expert assistant entomologists and several minor assistants and aids is devoted to the preparation of material for permanent storage in the United States National Museum, for exchange with other institutions, and for illustration and description.

Experimental Work with Insecticides.

During the year a considerable number of experiments with insecticides and other methods of controlling insect depredations have been conducted. A great many insecticide substances are constantly being advertised, and many of them are sent to the Entomologist for experimental examination and test either from purchasers or the manufacturers. Most of these are of very little value, or are combinations of old and well-known insecticide substances, sold, however, as a rule, under their new form at many times their real cost. The assistance of the Chemist has been invoked to determine the composition of these substances, and he has recently established a special section for insec-

ticide analysis and investigation in cooperation with the Division of Entomology.

To determine the feasibility of eradicating household insects by fumigation with hydrocyanic-acid gas several valuable experimental operations have been conducted, with the result of the establishment of the complete practicability of disinfecting houses by this means. This poisonous gas can be used without risk to human life if the operation is carried on with proper precautions, but no one is advised to undertake it without having fully acquainted himself with the steps in the process as indicated in Circular No. 46 of the Entomologist's office.

Silk Investigations.

The silk investigations authorized by the last Congress have been placed in the charge of the Entomologist. Miss Henrietta A. Kelly has been employed as special agent in silk culture in the South, and is charged with the preparation of a manual of instructions which it is expected will be ready for publication and distribution this fall. She will also look over the ground and select suitable locations for model silk plantations and rearing establishments which may serve as schools of instruction where interested persons and others may come and acquire familiarity with all the steps in the care of caterpillars and the handling of cocoons. The Entomologist, Dr. Howard, during the summer made a careful examination of the silk industry of southern France and of Italy, studying especially the methods of reeling silk, and silk manufacturing establishments, mulberry culture, and breeding methods. He has also arranged for the purchase of "seed" or silkworm eggs which can be relied upon as free from disease, and has negotiated for the importation of desirable mulberry stock. It is the intention to follow up this investigation by establishing experimental stations in the South, by cooperative work with some of the agricultural experiment stations which have expressed the wish to assist us in the investigation of silk culture, and also to establish at some suitable point a practicable reeling plant so that the silk cocoons produced in small quantities may be purchased and reeled and the product marketed.

Apicultural Investigations.

In apiculture the work has included an importation of select breeding queens from Italy and smaller importations from Austria and Cyprus. These were forwarded to experiment stations and to bee raisers in different sections of the country. Very favorable reports from these queens have been received, notably from southern California, where, it was stated, while black bees were doing nothing, the Cyprians from the Department importation gathered a fair crop, double the yield also of the best Italians. Various crosses were made

between these races and some promising strains secured, one result being that the irritability of some excellent honey gatherers can be modified by using males of gentler races in the crosses.

DIVISION OF BIOLOGICAL SURVEY.

The Biological Survey is charged by Congress with three distinct lines of investigation, each of which is organized as an independent section of coordinate value with the ordinary Departmental division. The first, or Biological Survey proper, studies the geographical distribution of mammals, birds, and plants with reference to the climatic factors governing distribution, and from this study prepares maps showing the boundaries of the natural life zones and crop belts of the country; the second, or Section of Economic Ornithology, studies the food and food habits of birds with relation to agriculture and horticulture; the third deals with matters of game preservation and introduction.

Biological Survey.

California and Texas, owing to their great size, the diversity and commercial value of their agricultural products, and their promise of far greater development in future, have unusual claims on the Biological Survey. In California the work is peculiarly difficult by reason of the extraordinary diversity of the topography and climatic conditions. Not only are there torrid valleys below the level of the sea, and alpine summits towering to elevations above the limit of plant growth; there are also areas of excessive humidity, of frequent fogs and heavy rainfall, and areas of excessive aridity, hotter and drier than the Sahara, where perpetual sunshine is the rule and years sometimes pass without rain.

Owing to the trend of the principal mountains and the influence of the coast fogs, the zones run in the main north and south instead of east and west. Some of the large interior valleys, notably the Salinas, act as flues through which a great volume of fog flows daily at certain seasons, lowering the temperature and increasing the humidity for a distance of 75 miles or more. These great rivers of fog cut off the sun, lower the temperature, and increase the humidity, and by overflowing through canyons and side valleys also reach and exert their influence in numerous tributary valleys and basins, some of which lie between the main fog river and the coast. In these cases the usual conditions are reversed, for ordinarily the valleys of the coast ranges in retreating from the sea toward the interior receive less and less fog and more and more heat and sunshine. Each valley and each mountain slope therefore has its own climatic individuality and its own capacity or adaptability for particular agricultural and horticultural crops. Some are cool enough for apples, cherries, and the sugar beet;

others warm enough for almonds, raisin grapes, and citrus fruits. And in the case of some of those in which the same crops may be cultivated with equal success, these crops mature at widely different dates. Thus oranges ripen in southern California from January to April; on the Santa Barbara plain, in July and August; at Oroville, in November and December. Similarly, peaches mature at different points in northern California from May to September, and in Los Angeles as late as November. Cherries are ready for market in Vaca Valley in March and April, while in neighboring valleys they do not ripen until May and June. The great commercial importance of these differences in time of ripening of fruits is obvious.

The native fauna and flora of a region afford a suggestion as to its climatic peculiarities and agricultural possibilities, assisting one to conclude what farm crops and varieties of fruit will or will not be likely to succeed in a particular place. The Biological Survey is making a critical study of this subject, and is engaged in the preparation of maps showing the natural distribution of the faunal and floral areas and consequent courses of the crop belts, and is also preparing lists of the particular kinds and varieties of crops and fruits likely to succeed in each. The labor of tracing the zone boundaries in California is one of infinite detail, and is rendered still more difficult by the absence of accurate topographic base maps, except of the areas already mapped by the United States Geological Survey.

In addition to the work in California and Texas, some field work has been done in Montana, the Dakotas, Nebraska, Kansas, Indian Territory, New Mexico, Mexico, and Canada.

THE PRAIRIE DOG SCOURGE.

The extension of ranching on the Great Plains has led to serious, widespread, and reiterated complaints of steadily increasing losses from the depredations of prairie dogs. The increase in these pests is the natural result of the destruction of their enemies, chiefly coyotes and the larger hawks. Assistants were sent to various points in the afflicted area, from Montana to Texas, and much information was collected. As a result a circular of directions for the destruction of prairie dogs has been published, and an article on the subject was contributed to the Yearbook for 1901.

Section of Economic Ornithology.

During the year field work on the food habits of birds has been carried on in California and Maryland, and the stomachs of considerably more than 2,000 birds have been examined in the laboratory. Of these, 1,000 were of the game birds, 500 of sparrows, and the remainder distributed among other groups of economic value. A bulletin on

the food of sparrows has been published, one on the food of game birds is well advanced, and one including the results of an extended economic study of birds on a Maryland farm has gone to press.

For many years California fruit growers have complained of the destruction of buds and fruit by birds. In order to gain definite knowledge on this subject, the chief of the section was sent to California, where he spent several months studying the food habits of birds in the great fruit-growing districts. Besides observing the food habits and collecting the stomachs of birds killed in the fruit trees, he noted and collected the kinds of wild fruits and seeds, and also the insects found in the immediate neighborhood of the orchards, for aid in identifying the stomach contents of the birds.

Section of Game Protection and Preservation.

Work under the Lacey Act has been continued along three principal lines: (1) Publication of information on game protection; (2) improvement in the inspection service guarding the importation of foreign birds and mammals; (3) cooperation in restricting illegal interstate shipment of game.

Compilations and synopses of game laws have been issued and widely distributed, and are in constant demand. Among the most popular and useful of these are digests of the game laws and of the laws protecting nongame birds for the current year. An annual directory of State officials and organizations dealing with matters of game protection was also published.

During the year 287 permits were issued for the entry of about 200 mammals and 50,000 birds. The imported birds may be classed under two heads—game birds introduced for propagation and birds bought to supply the trade in cage birds. The latter greatly exceed the former in number. The inspection service, which now includes the principal ports of entry of both coasts, and also Honolulu, Hawaii, is now maintained by fees paid by the importers. Importers complain of this, and the Department would be glad to place the inspection service on a permanent basis should Congress make the necessary appropriation. By strict economy the service could be maintained at the three most important ports of entry at a total cost of $1,000 per annum.

DIVISION OF STATISTICS.

The work of the Division of Statistics has been continued on the usual lines. With a view to further improving its crop-reporting service two additional field agents have been appointed, and the statistical expert who has for some years had charge of the crop statistics of foreign countries competing with the United States has been sent to London, England, where he is in closer touch with the statistical offices of

the different European Governments, whose reports, along with the most authoritative commercial intelligence of interest to American agriculturists, he transmits to Washington by mail or cable from time to time.

In cooperation with the State Agricultural College of Minnesota a statistical investigation is being conducted by the Division of Statistics into methods of farming, the results of which will have an important bearing on such questions as the relative profitableness of crops, the economical utilization of farm labor, etc.

The work of this Division will shortly form the subject of a special report to Congress.

OFFICE OF EXPERIMENT STATIONS.

Development of the Work of the Office.

The functions of the Office of Experiment Stations have been enlarged in several directions during the past year, and the enterprises previously in its charge have become more extensive. Especial efforts have been made to aid the movement for the strengthening of agricultural education and research through the more definite formulation of agricultural science and the more thorough training of agricultural experts. For this purpose the work of this Office, in connection with the Graduate School of Agriculture, as described elsewhere in this report, has proved to be unusually successful and effective. Attempts have also been made to call the attention of the agricultural public and the managers of educational systems to the great desirability of making agricultural subjects a part of the curriculum of secondary and elementary schools. The development of the farmers' institutes as effective agencies for the dissemination of the results of the work of this Department and the experiment stations has also received attention. The agricultural experiment stations under the direct management of this Office in Alaska, Hawaii, and Porto Rico have been put upon a firm basis, and much progress has been made in developing useful lines of work in these regions.

The Office has been brought into closer relations with the institutions for agricultural research in foreign countries through work involved in the preparation of a bulletin setting forth the organization, resources, and lines of work of these institutions. By this means our knowledge of these foreign institutions has been greatly broadened, and it will be more feasible hereafter to secure definite information regarding their work which will be useful to similar institutions in this country. Both the legal and engineering features of the irrigation investigations have been enlarged, and a beginning has been made of investigations in other lines of agricultural engineering which have hitherto been neglected by this Department. Improvements

have been made in the apparatus and methods for nutrition investigations. The results of these investigations have been more effectively brought to the attention of teachers of physiology and domestic science, and beginnings have been made of what it is hoped may develop a systematic study of dietaries in public institutions.

With the expansion of its work the amount of useful material prepared for publication in this Office has materially increased. Special efforts have been made during the past year to publish this material in forms which will contribute to its effective and economical distribution. The performance of duties growing out of the relations of the Department with the Civil Service Commission has also involved considerable work. With the constant and rapid growth of the system of agricultural education and research in this and other countries the general business of the Office in its relations with outside institutions is necessarily enlarged from year to year.

Progress of the Experiment Stations.

The feature of the progress of agricultural institutions in this country which has attracted most attention during the past year is the rapid increase in the public interest in these institutions. This is shown in the increase in the number of students in agricultural colleges and schools, in the larger attendance at the farmers' institutes, in the enlarged correspondence and mailing lists of the stations, in the increased demand for trained workers in agricultural and other business enterprises requiring scientific and expert knowledge and skill for their most successful management, and in the wider space given to agricultural education and research in agricultural and other journals.

During the year a number of new institutions for investigations in agriculture have been established in different States. The State legislatures have continued to be very liberal with the agricultural colleges and experiment stations. Over half a million dollars annually are now contributed by the States to the maintenance of the experiment stations.

Evidences of the influence of station work in improving agricultural practice and benefiting the farming interests of the country continue to multiply. This influence is felt in all of the various phases of agricultural operations. It is possible here to briefly refer to only a few recent examples of the practical benefits which are being derived from investigations by the experiment stations.

The origination and introduction of improved varieties of cereals through the agency of the stations of the grain-growing region, cooperating with this Department, is resulting in a vast increase of the grain-producing capacity of the country. As an illustration of this it may be cited that a variety of oats imported by the Department and

tested and improved by the Wisconsin station, among others, has been widely distributed and grown, with results which indicate that its general introduction will be followed by an average increase of yield which may be safely estimated at from 3 to 5 bushels per acre. As the acreage of oats in Wisconsin alone in 1901 was, according to our Statistician, 2,290,288, producing 66,647,381 bushels, worth $25,992,479, this would mean a gain to the farmers of Wisconsin annually of from $2,400,000 to $4,400,000 on the oat crop alone.

Marked improvement in the yield and quality of wheat in the Northwestern States is resulting from the distribution of improved varieties originated by the Minnesota station. One of the results of the work of the Illinois station on the breeding of corn has been the formation of the Illinois Seed Corn Breeders' Association, a chartered organization, with a limited membership of reputable and well-known corn growers, pledged to select and grow their seed corn according to definite rules formulated by the station and to sell only their own crop. The success of this enterprise has been phenomenal. All of the available supply of the improved seed is rapidly disposed of to farmers and much of it is engaged in advance. The work of this station on corn is proving to be far-reaching in its results, not only in improving the general quality of seed corn, but in inducing practical men to undertake breeding for special qualities—for protein, for oil, or for starch—which the station has demonstrated to be entirely feasible. The influence of station investigations is also being widely exerted in the grain-growing region in the introduction of rotations to conserve soil fertility in place of the exhaustive system of continuous grain cropping heretofore generally followed.

The beneficial effects of the work of the stations in the older States on fertilizers are becoming every year more apparent in the economical purchase and intelligent use of fertilizers by farmers. For example, as a direct result of the investigations and advice of the New Jersey station, organizations of farmers have been formed in the truck-growing districts of that State for the purchase of unmixed fertilizing materials, thus effecting a saving of from 25 to 40 per cent in the cost of their fertilizers, and at the same time securing better results as regards earliness, yield, and quality of product.

The recent introduction into a number of States of a system of inspection by the stations of feeding stuffs, similar to that which has been in force for some time for fertilizers, furnishes a very effective means of protecting farmers against fraud and of inculcating correct ideas regarding feeds and feeding. It is encouraging to note that in many States farmers are now following very closely the advice of the stations regarding the purchase of concentrated feeds and the balancing of rations made from home-grown products.

The rapid extension of the rational use of silage and the very

general adoption of the round form of silo is directly traceable to experiment station influence.

Through the efforts of the Department and the stations, the application of insecticides and fungicides as means of protection against injurious insects and plant diseases has become almost universal, and the benefits and profits resulting from the practice are no longer questioned. Striking evidence of the readiness with which farmers and fruit growers will now adopt promising means of plant protection is furnished by the fact that the method of formaldehyde treatment of smut of oats, proposed by one of the stations, was almost immediately put into use by over 25,000 farmers in the State of Wisconsin alone, with the prospect that the number using the method will be vastly increased the next year. As the estimated loss from oat smut in Wisconsin varies from $3,000,000 to $7,000,000 annually, according to the season and other conditions, the value of an effective means of prevention of the disease can be readily estimated.

The Utah station has achieved notable success in its study of the extent to which dry farming, that is, farming on lands in the arid region which can not be irrigated, may be practiced with profit and the conditions necessary to success. This work is bearing fruit in the rapid extension on a safe basis of what has heretofore been a very precarious system.

So rapidly has the demand for the services of agricultural experts spread in different directions that the workers in this service have in many instances been overworked, or, at least, have been forced to dissipate their energies in attempts to cover too many fields. There is, therefore, a most urgent necessity that the number of workers in our agricultural institutions should be increased so as to permit proper specialization of work. The station investigators must be relieved of teaching, lecturing at farmers' institutes, and other services, which, while important in themselves, distract their attention, dissipate their energies, and seriously hinder the progress of effective investigations.

It will be of little use to construct expensive laboratories and equip them with elaborate apparatus unless they are manned with first-class investigators. There is nothing new in this proposition, but the progress of agricultural institutions in this country in recent years makes it imperative that the work of the experiment stations and of this Department as the source of new knowledge on agricultural problems should be raised to the highest grade and kept there. The wider the work of the agricultural colleges, schools, farmers' institutes, and other agencies for the education of our rural population becomes the more important is it that the institutions of research in agriculture should be the best that human wisdom can devise. It is now necessary to insist on this more strongly than ever before, and it will be necessary to reiterate it until the managers of agricultural institutions and

the friends of agricultural progress accept this principle in practice as well as in theory. Under present conditions a large number of the experiment-station workers are attempting too many different kinds of work, and the progress of the station is seriously hindered from this cause.

One result of the lack of a sufficient number of well-trained and experienced workers in our agricultural institutions is that the best men are constantly being shifted from one institution to another or are departing to outside enterprises offering larger salaries and other attractions. The past year has witnessed an unusually large number of such changes in the personnel of the experiment stations. This is a very serious matter, since the time element in the conduct of agricultural investigations is an important one. Until the tenure of office in our stations is much more stable than at present we must expect that there will be much waste of work and funds in incomplete investigations due to the frequent shifting of the officers in charge. There is also need of increased funds for the general expenses connected with agricultural investigations.

Cooperation of the Stations with the Department.

During the past year many cooperative enterprises between the different Bureaus and Divisions of this Department and the experiment stations have been continued and contracts have been made for a considerable number of new investigations on this plan. In order to more clearly define the conditions under which such cooperative arrangements should be made a plan was formulated for conducting this work and transmitted to the directors of stations as well as to the chiefs of Bureaus and Divisions of the Department. This has cleared away some difficulties hitherto attending arrangements with the stations, and especially has defined the responsibilities of both the Department and stations in such enterprises.

The work undertaken conjointly with the stations is of the most varied character, but under the system devised there is no friction, and it is believed that much good will result to both the Department and the stations by this close union of interests. In all cases the general policy is to bring about a definite and clear understanding regarding the responsibilities of the Department and the stations, and when this is accomplished the carrying out of the details is a comparatively simple matter. The Department is not concerned with local State problems, but there are questions not bounded by State lines which the Department can take up, and which, with the cooperation of one or more stations, should be earnestly investigated. In this way the Department becomes the medium for the combining of interests in a way that will be helpful to all.

Graduate School of Agriculture.

A new enterprise in agricultural education has been inaugurated by the establishment of the Graduate School of Agriculture, which held a four weeks' session during the month of July, 1902, at the Ohio State University, Columbus, Ohio. The plan for this school was originated by Prof. Thomas F. Hunt, dean of the college of agriculture and domestic science of the Ohio State University, the purpose being to establish a school for advanced students of agriculture at which leading teachers and investigators of the agricultural colleges and experiment stations and this Department should present in some regular way summaries of the recent progress of agricultural science, illustrate improved methods of teaching agricultural subjects, and afford a somewhat extended opportunity for the discussion of live topics drawn from the rapidly advancing science of agriculture. This idea received the cordial support of President Thompson of the Ohio State University, and on the recommendations of these two men the board of trustees of the university voted to establish such a school and generously made provision for the financial support of its first session.

The Association of American Agricultural Colleges and Experiment Stations at its convention in 1901 favored the plan for the school and voted that, if the success of the first session seemed to justify its continuance, it be made a cooperative enterprise under the control of the association. Believing this movement to be in line with the objects for which this Department was created, I gave it my cordial approval, and on my advice the Director of the Office of Experiment Stations consented to act as dean, and other officers of the Department of Agriculture to be members of its faculty. Under these favorable auspices there was little difficulty in securing a strong faculty. As actually organized, this included 35 men, of whom 26 are professors in agricultural colleges, 7 are leading officers of the Department of Agriculture, and 2 are officers of the New York State experiment station. Courses were offered in agronomy, zootechny, dairying, and breeding of plants and animals. The school was housed in the substantial and well-equipped agricultural building of the Ohio State University, where were illustrated the most improved apparatus of instruction in soil physics, dairying, and other agricultural subjects. Besides the live stock of the university farm, leading breeders of Ohio furnished choice animals for the stock-judging exercises.

General problems of agricultural science and pedagogy were discussed at the inaugural exercises and at Saturday morning conferences. Among the topics thus treated were the history of agricultural education and research in the United States; the organization of agricultural education in colleges, secondary schools, nature-study courses, correspondence courses, farmers' institutes, and various forms of

university extension; what constitutes a science of agriculture; methods and values of cooperative experiments. Through social assemblies, visits to typical Ohio farms, and much informal discussion wherever the students met each other, the educational influences of the school were greatly extended. Seventy-five students were in attendance. These were drawn from 28 States and Territories, including such widely separated regions as Maine, Oregon, California, New Mexico, and Alabama. There was one student from Canada and one from Argentina. There was also one woman, and the colored race was represented by teachers from the Tuskegee Institute and the agricultural college at Greensboro, N. C. Twenty-seven of the students are professors or assistant professors of agriculture in agricultural colleges, 31 are assistants in the agricultural colleges and experiment stations, 9 are recent college graduates, and 8 are engaged in farming.

Considering the character of the faculty and students, it goes without saying that the whole period of the session was occupied with the most earnest and profitable work. Without doubt the influence of this school will be felt throughout the country in the improvement of courses of instruction in agriculture and the strengthening of the lines and methods of investigation of agricultural subjects. In other ways the school will exert a beneficial influence. So rapid has been the accumulation of materials for a real science of agriculture during the past few years that even professional students of agriculture have not realized how large a mass of knowledge is already available for molding into a systematic body of truth which may be utilized for pedagogic purposes, as well as for inductions of scientific and practical value. The summaries given by the experts gathered at this graduate school have emphasized this fact and shown in a striking manner that agricultural education and research may now be properly and efficiently organized with reference to the science of agriculture itself, rather than be as heretofore very largely a matter of the sciences related to agriculture. This will serve to stimulate greatly the movement already begun for the reduction of the materials of agricultural science to "pedagogic form" for use in colleges and secondary schools, and for the reorganization of agricultural institutions of research on the basis of the divisions and subdivisions of agriculture instead of physics, chemistry, botany, and other primary and secondary sciences. The day will thus be hastened when the science of agriculture will rank as one of the great systems of knowledge of direct benefit to mankind.

Improvement of Rural Schools.

We are, without doubt, in this country just on the edge of a great popular movement for the improvement of the conditions of rural life through the improvement of the rural schools. As one phase of this movement there will come the broadening of the instruction in the

principles of agriculture, so that in addition to college courses we shall have secondary courses in ordinary and special high schools, and even some elementary instruction in the common schools. In establishing the lines and methods of secondary and elementary instruction in agriculture so that it may be useful and attractive to the masses of our rural youth, the leaders in agricultural science gathered in the Graduate School of Agriculture this summer will play an important part, and it is believed that they have gone out from this school with much inspiration to renewed efforts in this direction. For both the thorough establishment of the science of agriculture and the wide popularization of this science, the new school will, it is believed, be an efficient agency, and I hope the way may open for it to become a permanent institution.

The Agricultural Colleges.

A number of the agricultural colleges have made considerable progress during the past year in strengthening and broadening their courses in agriculture. Specialists in agronomy, animal husbandry, soil physics, soil bacteriology, dairying, and other branches of the general subject of agriculture have been added to their faculties. This has made it possible to materially increase the number of different courses in agricultural subjects offered to their students. This is especially true of the short or special courses in agriculture for students who for one reason or another are not able to take the entire course leading to the bachelor's degree.

Statistics of attendance at the land-grant colleges for the year 1901 show that over 42,000 students were enrolled. This was an increase of nearly 7 per cent over the attendance for the previous year. The total attendance upon four-year courses in agriculture (including dairying) increased more than 26 per cent. The number of students in special courses has fallen off relatively, indicating a growing recognition of the greater value of the full collegiate course in agriculture as compared with specialization along narrow lines in undergraduate work.

During the past two years there has been a remarkable increase in the number of buildings erected at these colleges. It is estimated that during this period at least $2,000,000 have been spent by the States for this purpose. In these buildings there are not only improved facilities for instruction in the sciences related to agriculture, but also more particularly for the teaching of the different branches of the science of agriculture itself. The changes in equipment and in the organization of faculties have put college instruction in agriculture largely on a new basis. Since the new courses deal much more largely directly with agriculture, both as an art and a science, the students are not only well trained in the theory of agriculture, but are brought

much more closely into sympathy and actual contact with the practice of the art. Each year the chasm which formerly existed between science and practice is being more strongly bridged. Stronger bonds of sympathy and effort are uniting scientists and farmers through the medium of the agricultural institutions. The colleges therefore not only occupy a better position in the educational world, but they are also more strongly intrenched in the confidence and support of the great masses of practical men.

Secondary and Elementary Schools of Agriculture.

Institutions for secondary and elementary instruction in agriculture are becoming more numerous. Schools of this class already established have been continued, new schools are being established, and courses of instruction in agriculture, nature study, and gardening are being introduced into existing public and private schools. The marked success of the agricultural high schools established in connection with the universities of Minnesota and Nebraska indicates that there is a demand for agricultural courses of parallel degree with those offered in various manual arts in our city high schools. Already there is a promising movement for the establishment of special agricultural high schools in different localities separate from the colleges, and some instruction in agriculture is now given in a number of normal and public high schools. Students taking such high-school courses would undoubtedly be able to better appreciate the work of this Department and the agricultural experiment stations and would have a better outlook regarding the movements of our times for the improvement of agriculture, which would enable them to become intelligent, progressive, and successful farmers. All over our country farmers are sending their children to public high schools and paying tuition for their instruction. They have, therefore, good reason to urge that courses on subjects related to agriculture should be introduced into these schools, especially in towns which are wholly or largely dependent on the neighboring farms for their commercial success, if not their very existence.

Since the funds expended in promoting technical education in agriculture are in the nature of investments which will be richly repaid in larger amounts of assessable farm property and the increased wealth that comes from improved farm products, both the States and the local communities can well afford to make liberal contributions to the support of courses in agriculture in the secondary schools as well as in the agricultural colleges.

Progress is also being made in the movement for the consolidation of rural schools which has already resulted in improved conditions in the schools of Ohio, Massachusetts, Iowa, and other States. Such consolidation makes it possible to introduce nature study in which matters pertaining to agriculture, horticulture, and domestic arts are

easily included. Several States have already passed laws requiring teachers to prepare themselves to give instruction in nature study and agriculture, and exercises and illustrative material for such work are being more frequently published, often with the aid of the teachers in the agricultural colleges.

Another closely allied movement at present manifest principally in the city schools is the school-garden movement—the introduction of garden work with flowers and vegetables into the graded schools as a weekly or semiweekly exercise. Wherever work of this kind has been tried under proper supervision it has aroused considerable interest on the part of the students, has furnished excellent material for nature-study work, and has correlated well with the other studies in the curriculum.

Farmers' Institutes.

In my last annual report I recommended that an appropriation of $5,000 be given to enable the Office of Experiment Stations to undertake work connected with the promotion of the farmers' institute system in this country. The appropriation was to be used in employing an officer who would devote his time and energy to this work, visit institute workers and advise them regarding the ways in which the Department might help the institutes, study the problems of institute management at home and abroad, and seek to shape the Department's work for the institutes so that it might be most helpful to this enterprise. As the matter was finally fixed in the appropriation act, only about $2,000 of the income of the Office of Experiment Stations for the current fiscal year can be used for this purpose. This is entirely inadequate for the work planned, but will be used in gathering statistics of the institute movement and in employing, during a part of the year, an officer who will be retained as farmers' institute specialist, if Congress shall provide sufficient means for continuing the work.

Farmers' institutes are now held in 44 States and Territories, including Hawaii. Nearly complete returns from 40 States and Territories show that in the areas reported about 2,300 institutes are held annually; that the funds expended by the different States and Territories in support of these institutes (not including expenses incurred by local authorities) amounted to about $196,000 per annum, and that about 709,000 people attended the institutes. The number of students taking the agricultural course at the agricultural colleges in the same States and Territories during the year ended June 30, 1901, was 9,623, including those who are recorded as attending courses in household economy, dairying, and veterinary science.

The total number of persons reached by the farmers' institutes and the agricultural colleges (about 720,000) is, however, only a small percentage (7.2 per cent) of those actually engaged in agricultural pur-

suits (about 10,000,000). The publications of the experiment stations are sent to about 500,000 farmers. A great need of our educational system is, therefore, wider dissemination of the results of agricultural study and research among those now actually engaged in farming.

I recommend that an appropriation of $6,000 be made by Congress to enable the Office of Experiment Stations to aid the farmers' institutes during the fiscal year 1904.

Experiment Stations in Alaska.

Agricultural experiment stations were maintained during the fiscal year 1902 at Sitka, Kenai, and Rampart. The experimental work has included the growing of cereals and vegetables, methods of reclamation, drainage, and fertilization of land, and the curing and ensiling of forage crops. In all these lines successful results were obtained, and much information which will be of use to persons attempting agriculture in Alaska was acquired. The survey of different portions of Alaska with reference to their agricultural possibilities was continued. The special agent in charge made a journey through a large portion of the Yukon River Valley. A reconnoissance of the Copper River regions and portions of the Fortymile country and the Tanana River Valley was made during September, 1901, by the assistant who had been in charge of the station work at Rampart. He estimated that in the region covered by his journey there was some 2,000,000 acres of land suitable for farming and pasture. Grass grew abundantly and luxuriantly in large regions.

The distribution of seed of hardy varieties of vegetables, cereals, and grasses has been continued and extended, seed for use the present season having been sent to some 750 addresses. Many reports of trials of seed previously sent have been received, and in this way much useful information has been secured. It is evident that the efforts made by the Department to aid the residents of Alaska in their agricultural work by distributing improved varieties of seeds have produced beneficial results. Not only has this been of advantage to the white population, but the natives also are learning to cultivate gardens, and it is reliably reported that there is a large increase in the number of natives who attempt to cultivate small patches of ground.

The equipment of the stations in Alaska has been increased by the erection of a barn, cottage, and small blacksmith shop at Sitka and the completion of a small station building at Kenai. During the present year a beginning will be made of establishing a nursery of hardy fruits at Sitka. Only a limited amount of work in this line can be done until a horticulturist is added to the station staff. It is also planned to secure a small flock of Angora goats, with a view to ascertaining whether these animals can be successfully reared in the coast region of southern Alaska. The plants naturally growing in this

region will furnish abundant forage for goats. The work at Kenai will be continued and similar operations will be carried on at Rampart and Wood Island and in the Copper River region.

It is hoped to complete the headquarters building at Sitka during the present year. The cost of this work will be about $2,000. As soon as possible a small herd of cattle should be placed at the Kenai station and experimental work in animal husbandry begun. This would involve the building of a barn there and the employment of additional laborers. The station at Sitka should have an equipment of chemical apparatus sufficient for simple chemical work.

As long as the income of the stations is on the present basis it will not be possible to do more than maintain the stations at Sitka and Kenai and do a very limited amount of work at one or two places in the interior.

Hawaii Experiment Station.

A large amount of work has been done at the Hawaii experiment station during the past year in clearing and preparing for cultivation portions of the tract reserved for the station and establishing plantations of fruit and other valuable trees and experimental plats. The buildings begun the previous year were completed, and the station now possesses a residence for the special agent in charge, an office and laboratory, stable, cottages for laborers, water tanks, etc.

Experiments have been begun with potatoes and taro to overcome the very destructive diseases which seem to threaten the extinction of these crops. Taro forms the principal food of the Hawaiians, and the ravages of the blight have so curtailed the supply that there has been actual suffering in some places because of the shortage. At present the experiments are being confined to the lowland taro, and an effort is being made to find some remedy for the disease that attacks the root. Dry-land taro does not appear to be as susceptible to disease, but it will be studied also. It was found in many cases that immature and diseased cuttings were used for planting. The lowland form of taro requires extensive irrigation, and in practice the land is kept flooded for a considerable time. Wherever the water was allowed to become stagnant it was found that the root rot was most prevalent. By the use of fertilizers it was found possible to actively stimulate the growth of the plant and make it less liable to disease. Wherever a liberal application of lime was made there was no disease, and with care in the management of the water, selection of cuttings, rotation of crops, and use of lime and fertilizers it was found possible to not only reduce the disease, but to considerably increase the production of the crop.

The experiments with potatoes were conducted upon the island of Maui in cooperation with one of the residents of that island. This island formerly produced the most of the potatoes grown in the archi-

pelago. A disease locally known as black rot has for ten or more years been seriously depreciating the crop. This, as has been determined by the station authorities, is due to a soil fungus, and experiments are being undertaken to combat it. In the field investigations 45 varieties of potatoes were grown under similar conditions, and marked differences were noted in the susceptibility of the varieties to disease. This work is to be followed up in the hope that some sorts may be found which are nearly or quite resistant to disease.

Investigations were begun on the diseases of poultry, and a bulletin was issued in which suggestions were given for the care of fowls and treatment of the diseases to which they are especially subject, and as a result of which poultry and eggs are excessively expensive in the Hawaiian markets.

Attention has also been given to fiber plants, mangoes, the castor bean, pineapples, peppers, and rubber and cork oak trees, and other plants believed worthy of investigation and development. A study has also been made regarding the use of pumps for irrigation purposes in the Hawaiian Islands, where the pumping of water for this purpose has in all probability reached its highest development. Members of the station staff have visited other islands of the group and an attempt has been made to get into touch with all the agricultural communities. Farmers' institutes are being organized under the auspices of the station. Bulletins on chickens and their diseases and on taro have been prepared and others are in course of preparation. It is clear that there is a wide field for agricultural investigations in this Territory. Owing to local conditions of soil, temperature, rainfall, and other natural conditions, the station will be obliged to do much work in different localities.

The presence of enormous numbers of destructive insects is one of the chief obstacles to agriculture in Hawaii. The land areas are small and the uniformity of seasonal temperatures presents no check to the development of insects which may have been introduced from continental regions. As a result the insects speedily lose their distinctive habits. Many of the introduced species no longer have a definite life period, but breed at all seasons and are practically in continuous existence throughout the year, swarm following swarm, with no intervening period when the land is free from their ravages.

There are a number of serious fungous diseases of plants which require investigation, both because of the local losses caused by them and on account of the possibility of their being carried to other parts of the islands. The work on the taro rot and the Fusarium disease of the potato will need to be continued for several years.

There are many problems of both scientific and practical interest which require the services of a chemist. Soil and water analyses, the study of the rôle of mineral nutrients in plants and soils, the composi-

tion of Hawaiian foods and feeding material all should be given attention. Investigations should be made as the occasion requires of other agricultural products which may lead to the establishment of local industries, such as fiber plants, tans, dyestuffs, rubber, vanilla, coffee, tobacco, silk, fruits, and vegetables.

Considering the numerous agricultural problems requiring investigation in the Territory of Hawaii, the experiment station there should have added to the station force a chemist; the apparatus and other equipment should also be increased, and provision made for the printing and distribution of station publications.

Porto Rico Experiment Station.

The agricultural experiment station in Porto Rico is now established on a permanent basis. This result has been secured through the cooperation of the insular government and legislature. A bill appropriating $15,000 for the purchase of a suitable tract of land for the station was passed in February, 1902. Under this law bids were called for which were closed the 12th of May. The result of these negotiations was the purchase of approximately 230 acres of land adjacent to the city of Mayaguez. The land is varied in character and well located with reference to the city. It gives promise of making a very desirable site on which to carry out the objects of the experiment station.

On this tract it is proposed to begin field tests of leguminous crops, grasses, corn, rice, beans, and vegetables. A nursery and orchard of tropical fruits, including those grown on the island, and promising varieties from other countries will be established for experimental purposes. With the temporary experiments undertaken last year much useful information has been obtained regarding soil and climatic conditions as related to the growth of crops in the island. An important study has also been made of the Changa, a mole cricket, which is the most injurious insect of the island, and a bulletin regarding this insect will soon be published in both Spanish and English for distribution in Porto Rico. Experiments looking toward the improvement of coffee, now grown so largely in the island, have already been well begun, and it is proposed to extend them materially during the coming year.

It is important that the Porto Rico station should undertake experiments with live stock, but it will not be possible to do much in this direction unless the resources of the station are increased. Additional funds will be required for the employment of a competent live-stock expert, the purchase of animals, and the general expenses of feeding experiments. In order to effectively conduct experiments with fruits a horticulturist should be added to the station staff.

Now that the Porto Rico station is permanently located, it should, in my judgment, receive the same financial support from the National Treasury as is given to the stations organized under the act of Con-

gress of March 2, 1887. Considering the large population to be maintained by agriculture in Porto Rico, every effort should be made to develop the agricultural resources of the island. The station will be called upon to aid in the solution of a great variety of problems. The range and effectiveness of its work will necessarily be limited by the funds at its command. When the nation does as much for the Porto Rico station as for stations in the other States and Territories, there will still be need for additional financial assistance from the insular government. The cordial support which has been given the station by the Government and the substantial grant of money voted by the insular legislature for the purchase of land for the station have given evidence that the people and government of Porto Rico appreciate the importance of this enterprise and are willing to supplement the efforts of the National Government in this direction. As the work of the station develops, additional buildings and equipment will be needed, and it is confidently expected that these requirements will be met by the local legislature.

Nutrition Investigations.

The nutrition investigations have been continued along the same lines as heretofore, including dietary studies, and digestion, cooking, and metabolism experiments. These studies have been carried on in cooperation with universities and experiment stations in Maine, Massachusetts, Connecticut, New York, Tennessee, Illinois, California, Minnesota, Vermont, and Georgia. The respiration calorimeter used in these investigations has been improved, and the studies during the past year with this apparatus have had reference especially to the relative efficiency of fats and carbohydrates as sources of energy for the performance of muscular work. To further study the relation of diet to muscular work, dietary studies with lumbermen performing severe work in the forests of Maine have been made. Among other subjects of investigation have been the digestibility and nutritive value of bread made from different kinds of flour; the effect of cooking on the nutritive value and digestibility of different kinds and cuts of meat; the relative nutritive value of different kinds and combinations of fruits and nuts, and the comparative metabolism of nitrogen, sulphur, and phosphorus. Five bulletins regarding the results of nutrition investigations were published during the past year. Special efforts have been continued to bring the results of this work to the attention of schools and colleges, physicians, scientists, superintendents of public institutions, persons engaged in philanthropic enterprises, etc.

At the summer school of nutrition and bacteriology, held at Wesleyan University, Middletown, Conn., in July, 1902, under the direction of the special agent in charge of nutrition investigations in connection with his work as professor in that institution, the methods and

results of the nutrition investigations of this Department were explained to a considerable number of teachers of domestic science from different regions, and others who have engaged to a greater or less extent in the teaching of nutrition, bacteriology, and kindred subjects in the agricultural colleges and other institutions.

As stated in my previous report, it is very desirable to extend the nutrition investigations through a systematic study of dietaries in public institutions. Plans for beginning this work have already been made and considerable material, including summaries of results of early investigations, has been collected. Through an arrangement with Dr. A. B. Richardson, superintendent of the Government Hospital for the Insane in the District of Columbia, dietary studies will be made in that institution during the current year in accordance with plans furnished by this Office.

In early times the idea was prevalent that the diet of prisoners and other delinquent classes should be so poor and inadequate that it constituted a punitive measure. This is now recognized as wrong, and most civilized nations endeavor to feed such persons adequately. The food requirements obviously vary with the amount of work performed, and in most cases it is essential that the cost of the food be moderate. Food investigations are required in prisons and other institutions in order that satisfactory dietary standards may be formulated, and also to compare the rations actually fed with proposed standards. The importance of such studies has been often recognized in the past; for instance, under the authority of the institutions' commissioner in Boston, Mass., dietary investigations were carried on in a number of reformatories, etc., in that city. Studies have also been made at the reformatory at Elmira, N. Y., some of which had the special object of determining whether it was possible to favorably affect the moral welfare of inmates through their diet.

Under special government authority the diet in Scotch prisons has been recently studied, and mention may also be made of recent work of a similar nature in Berlin. In many cases it has been found that it is possible to furnish a more satisfactory diet and at the same time diminish the cost.

Nutrition investigations have also been made in almshouses, orphan asylums, and similar charitable institutions in times past in this and other countries—Germany having taken the lead. The importance of providing a proper diet for inmates of such institutions has received government recognition in Great Britain, and investigations bearing on the subject have been undertaken there. An adequate diet should unquestionably be supplied to all who are dependent on charity of this sort. The numerous studies which have been made show that with proper care good food may be provided at a reasonable cost. While the diet in many institutions is undoubtedly satisfactory as regards

kind and cost, it is not too much to say that in very many others dietary studies would show the possibility of diminishing the cost and at the same time improving the quality. The benefit to the inmates and saving of public money in this way seem worthy of all possible effort.

In previous reports I have called attention to the fact that investigations were needed to determine the food habits and requirements of residents of tropical countries. This matter is becoming of increasing importance, owing to the continuance of soldiers, sailors, and civil officers of the United States in such regions. This, and the fact that large numbers of our people are called to tropical regions by our rapidly extending commerce, would seem to justify the institution of such investigations to determine the most suitable diet under the new climatic conditions. It is well known that a suitable diet is a matter which has a great effect upon the maintenance of good health of old residents in tropical countries, and is even more important for recent arrivals. The U. S. Army has devoted considerable attention to this subject, as have also German, British, and other European investigators, generally under the auspices of the army or navy of their respective Governments. The lack of agreement regarding the diet best suited to residents of the Tropics shows that more extended investigations are required.

The economic feeding of troops and other residents in tropical regions obviously depends in some measure upon the utilization of local food products. Many of these products are comparatively unknown outside the Tropics, and their food value has never been studied.

Irrigation Investigations.

Two causes have operated during the past year to increase the interest in the Department's work for irrigated agriculture. One was the desire of the arid States for the creation of conditions which will result in the largest and best use of the water supply, and the other the drought which prevailed throughout the Middle West in 1901 and in the South during 1901 and the present year. As a result of this interest, requests for information and advice have been far more numerous than ever before, and it is only through the increased appropriation made by the last Congress and the better organization of the work that these demands have been met.

The distribution and use of Western rivers require that the irrigation industry shall be organized, and in order to provide for this it is necessary that there be a better understanding of the subject than now exists. The first need is for the facts. We need to know how much water is being used, where it is being used, how much water is required for the maturing of crops, how it can be distributed with the least loss, and how applied to the best advantage. This information

the Department is securing and disseminating through this investigation, and in doing this it has enlisted in its service many of the leading irrigation engineers and scientists of the arid States. The services of these men would have involved a prohibitory expense if it had been necessary to employ them continuously, but through cooperative arrangements with the State agricultural colleges and experiment stations and the State engineers' offices the scope of both local and national investigations has been broadened and made more effective, while the outlay to each of the parties to these arrangements has been greatly reduced.

THE DISTRIBUTION AND USE OF WATER.

The Department is now making measurements of the water used in irrigation in all of the arid States but one and in a number of humid States. The results of these studies during the past three years, while not conclusive, have already done much to educate farmers and ditch managers as to the direction from which improvements of methods and practices must come. They have made plain the need of better work in constructing and maintaining canals. They have shown that the water lost through leakage in transit is far greater than has been generally supposed, and that its loss causes a double injury. It returns in many instances to the surface of lower-lying fields and converts productive areas into unsightly swamps and marshes, rendering them for the time practically worthless. The loss of water through evaporation from these submerged areas is large. If this could be prevented and the water saved applied to crops it would largely increase the cultivated area. One of the leading lines of work of these investigations will therefore be a more careful study of losses from seepage, in order to determine measures by which this can be lessened.

In a number of instances these studies have led to careful inquiries by canal owners to determine whether or not it will be profitable to cement the main ditches and canals, and to requests for further assistance from this investigation to determine how this may be done to the best advantage. The Report of Irrigation Investigations for 1901 will give the methods pursued and the cost of cementing one of the principal canals of southern California.

DRAINAGE SURVEYS.

In response to numerously signed petitions from the agricultural and horticultural interests of the valley of Kings River, in California, the Department has carried on a comprehensive drainage survey to determine what plans can be best adopted for relief of the overwatered lands of that section. This work has been under the direction of Prof. O. V. P. Stout, of the University of Nebraska, and the report, which is now approaching completion, will give the plans and estimates for

two methods of removing the surplus water and making it available for use elsewhere. The carrying out of these plans will probably require additional legislation on the part of the State, and a local committee has been formed to frame bills and promote the enactment of needed laws.

At the request of the Hon. A. J. McCune, State engineer of Colorado, the Department has assisted in the investigation of the drainage problems of that State. This work is under the direction of C. G. Elliott, a drainage engineer of wide experience. The information already gained makes it certain that these studies are to be worth many times their cost, both to the localities where they have been carried on and in their influence on the larger and better use of the water supply. Some fears have been expressed that the water coming from these drains would be unfit for use because of the large percentage of alkali it contained, but analyses made by the State experiment stations of Colorado and California have shown that this is not the case.

STUDIES OF IRRIGATION LAWS.

The larger problems which the complete use of Western rivers is destined to create and the measure of public control which recent irrigation legislation renders inevitable gives added interest to the Department's studies of the legal and economic phases of irrigation. The division of the water of streams among farms scattered for hundreds of miles along their courses, so that each acre cultivated shall receive its just share of the common water supply, is one of the most complex administrative problems which confronts Western agriculture, and the establishment of titles to these streams by methods which shall prevent speculative appropriations of water and the creation of water monopolies is one of the imperative needs of the immediate future.

The larger opportunities which national aid affords should awaken the civic pride of the States benefited in seeing to it that not only in material development but in their institutions the irrigation systems of this country rank among the foremost of the world.

A beginning of the studies of the conditions and experiences of other lands was made during the past year. Mr. C. T. Johnston, assistant chief of these investigations, visited Egypt for this purpose. Through the courtesy of Government officials he was enabled to become fully acquainted with the administration of the laws which govern the use of the Nile, and his report will show the character of the rights to water recognized and the manner in which these rights are enforced in times of scarcity. While differences in conditions will doubtless prevent the adoption of many of the methods pursued, the lesson of one of the oldest irrigated countries in the world can not fail to be of great interest and value to one of the youngest. In addition, Mr.

Johnston's report will present many matters of practical information regarding the size and construction of canals, the manner in which water is distributed and applied to crops, and the yield and value of the products.

A number of the arid States are cooperating with the Department in these studies of sociological and legal problems. Montana and Nevada appropriated money for such studies, and the irrigation officials of Wyoming, Colorado, and Idaho have given both personal and official aid. No branch of the Department's irrigation work has received more cordial recognition than its studies of legal and sociological questions, and it is believed that they are destined to exert a beneficent influence on the future industrial life of the West.

IRRIGATION IN THE HUMID STATES.

The development of the rice industry in Louisiana and Texas has had the effect of enormously increasing the value of land hitherto used only for grazing purposes or not at all. Its success has led to the investment of large sums of money and a marked increase in the population. In the amount of money invested in canals and pumping plants and in the increase in the acreage reclaimed, the rice districts of Louisiana and Texas have made as great progress during the past two or three years as any of the irrigated districts of the West. This rapid growth has given rise to a number of practical problems in which the aid of the Department has been invoked.

Establishing and maintaining pumping plants requires a knowledge of the amount of water required, the cost of furnishing it, and the methods by which waste in use may be reduced to the minimum. The light rainfall of the past two seasons has also made it manifest that the time is not far distant when there will be need for establishing rights to the use of streams and some division of their water supply among these irrigators. During the present season the rainfall from June to September was little more than that of many of the arid States, and this, combined with the large increase in the irrigated acreage, has made the drain on some streams cause their current to be reversed and salt water to flow in from the Gulf.

The growth of irrigation in the Southern States is not, however, confined to the rice districts. During the past year the experts of this investigation have furnished information and advice to farmers in Georgia, Alabama, and the Carolinas under which a number of irrigation systems have been installed. The drought of the present season has made the first year's trial a marked success, but it will require a number of years to determine to what extent irrigation can be profitably employed in this section. The fact that the Department was able to answer these inquiries has saved large sums of money to individual farmers. In nearly every instance they had planned to put in pumps

of too small capacity to have been of any real service, and the attempts would have resulted in disappointment and loss and probably have delayed adoption of what promises to be an important aid to both agriculture and horticulture.

The cooperative irrigation studies undertaken in connection with the State experiment stations of Wisconsin, Missouri, and New Jersey have been continued, the object being to determine how far and by what method irrigation can be profitably employed in the humid States.

In view of the increased interest in the questions with which the irrigation investigations of this Department deal, growing out of the rapid development of our irrigation system under private as well as public auspices, there is constantly enlarging demand for the services of our irrigation experts and for the published results of their investigations.

Agricultural Engineering.

In order to answer the inquiries received by the Department and to make the irrigation investigations of the greatest practical benefit, it has been necessary to include studies of the applications of power whose relation to irrigation is made apparent only by a thorough understanding of existing conditions. Farmers under irrigation apply to the Department for information regarding the use of streams and canals for power purposes. Many who desire to irrigate small tracts apply to the Department for information as to whether or not pumping will pay, the kind of pumps to be used, and the amount of water required. Inquiries are received as to the relative economy of different forms of power, and whether coal, oil, gas, electricity, or wind power will best serve the irrigator's purposes. These questions should be answered because nothing is more wasteful than to have each man learn experimentally for himself what has been found out elsewhere, but the attempt to do this has made agricultural engineering an important feature of these investigations, and raises the question whether the usefulness of the work of this Department can not be materially augmented by entering upon a systematic study of agricultural engineering as related to the interests of all our farmers.

The possibilities of this subject can be illustrated by the one item of farm machinery. In the past twenty years the capital invested in the manufacture of agricultural implements has increased from sixty to one hundred and fifty-seven millions, and the value of the product has more than doubled, but more significant than this increase in its importance have been the changes in its character. Leaving out of consideration the larger and more important classes of farm machinery, such as reapers, mowers, and thrashers, which are usually thought of as supporting the claim that American inventive genius and mechanical skill have surpassed the world in constructing farm machinery, and taking

up machines and implements but little thought of in this connection, it will be seen that the changes wrought in the past twenty years have been little less than revolutionary, and have been an important factor in maintaining our commercial supremacy. The invention of the disk harrow to supplement the types formerly used, the invention of the disk plow to compete with the types in use for centuries, the still more recent invention of corn-harvesting machinery, all serve to show the rapidity and radical character of the evolution which is now going on.

These facts, in connection with the increasing demand for efficient labor-saving devices resulting from the growing scarcity of farm labor and the organization and development in foreign countries of institutions for the systematic study and improvement of farm machinery, renders it important that we should not longer neglect this field of inquiry. There is an excellent opportunity for the Department to do an important service in promoting the continuance of our agricultural supremacy through the use of farm machinery by investigations regarding the fundamental principles on which the further improvement of such machinery must depend.

At present the Department is not in a position to answer the numerous requests for information on these subjects, and these demands will undoubtedly increase with the growing application of new forms of power to farm work and the development of new kinds of labor-saving machinery. The agricultural colleges and experiment stations throughout the country are beginning to realize the need of such studies, but they find great difficulty in establishing the work on an efficient basis owing to the lack of definite information in available form. It is believed that this Department should undertake to collate and publish such information, as well as to institute investigations which will keep the farmers and manufacturers of the country informed of the progress being made and show them the lines in which it may be extended.

Investigations in agricultural engineering should also include problems relating to the laying out of farms, such as the arrangement of buildings, drains, water supply, and disposal of sewage. The character of the agriculture of the twentieth century has made farm buildings as complex in design and varied in use as factories, and there is a wide field of study for improvement in design and for determination of the best material to be used in their construction.

The breeders of high-bred and valuable live stock need to give almost as much attention to stable sanitation as is given to house sanitation, but the data on which to plan efficient systems of ventilation are of the most limited character. It is believed that careful studies of the designing of farm buildings will be a benefit to agriculture, not only in saving large sums of money in the selection and combination of material used, but in the adoption of more convenient and effective plans.

Need of Adequate Funds.

This review of the work of the Office of Experiment Stations in all its phases shows very conclusively the necessity for more liberal appropriations, as submitted in my estimates for the ensuing year, for carrying on the several lines of work assigned to the Office of Experiment Stations. It is particularly desirable that the stations in Alaska, in Hawaii, and in Porto Rico, which are under the direct supervision of the Secretary of Agriculture, should be as liberally dealt with in this respect as are the stations in the several States and Territories of the Union.

DIVISION OF FOREIGN MARKETS.

Investigations made by the Division of Foreign Markets regarding the status of our agricultural export trade in the principal markets of the world disclose an exceptional activity on the part of some of our most formidable competitors for that trade, and particularly such countries as Australia, Canada, and Argentina. These progressive exporting countries have within the last few years been taking exceedingly active measures for the extension of their foreign business. As was pointed out in a publication recently issued by the Division on the subject of the British agricultural import trade, about two-thirds of the farm produce required by the British people to supplement their domestic supply is now being purchased from the various competitors of the United States. The success of these competing countries suggests the importance of constant watchfulness in the interests of our own export business.

Agricultural Exports in 1902.

Statistics recently prepared by this Division show that the agricultural exports of the United States for the fiscal year 1902 had a value of about $860,000,000. In comparison with the record-breaking figures of the preceding year, the value for 1902 exhibits a rather marked decline. Next to the exceptional record for 1901, however, it is the largest ever reported, being decidedly above the average of the decade.

The decline from the high mark reached by our agricultural exports in 1901 was principally due to the fact that a serious shortage in the corn crop left a comparatively small supply of this important export grain available for shipment to foreign markets. Our exports of corn during 1902 amounted in value to only $16,000,000, while in 1901 we sent abroad consignments worth nearly $83,000,000. The loss to our trade through the diminished shipments of this product alone exceeded $66,000,000.

Aside from the extraordinary falling off in corn exportation, the

most noticeable instance of decline occurred in the shipment of cotton. Our cotton exports for 1902 had a value of $292,000,000, or about $23,000,000 less than the figures recorded in 1901, when there were shipments worth $315,000,000.

Trade in Forestry Products.

The more active interest recently aroused in the question of forestry in the United States has created a larger demand for statistical information regarding our commerce in forestry products. To meet this demand the office devoted considerable time during the year to the preparation of statistics on the subject.

Last year the United States exported nearly $50,000,000 worth of forest products. Lumber in its various forms, not including heavy timber, comprised the principal item, the shipments under this head having a value of about $26,000,000. The exports of heavy timber, sawed, hewn, or in logs, were valued at about $10,000,000. Wood pulp and the minor products of the forest together formed an item of about $13,000,000.

Europe furnishes the principal foreign markets for American lumber. The United Kingdom is decidedly the largest purchaser, but extensive sales are also made each year to France and to Germany. Markets for our lumber, however, are found in nearly every quarter of the world. The neighboring countries of Canada and Mexico make considerable purchases. A promising market is now being developed on the island of Cuba, where in 1902 consignments worth over $1,000,000 were received. During the last few years a considerable export business in lumber has been established with the Philippine Islands. In 1902 shipments valued at $246,000 found a sale there. These islands, although rich in tropical hard woods, promise to afford an extensive market for the building lumber supplied so abundantly by the great timber districts of our Pacific slope region. Additional markets for that region will undoubtedly also be developed in other parts of the Orient.

Notwithstanding the immense timber areas of the United States, a larger sum is annually expended in the importation of forest products than is received in payment for such products exported. This is because of our extensive requirements as regards certain articles yielded only by the forests of the Tropics. It is quite probable that before many years the island possessions of the United States, and particularly the Philippine Islands, will supply a large part of the tropical forest products we are now obliged to import from foreign sources.

Trade with Island Possessions.

In view of the lively interest that is taken in the course of trade between the United States and the several island possessions, the office

recently prepared some statistics to show the status, so far as products of agriculture are concerned, of our commerce during the past fiscal year with Hawaii, Porto Rico, and the Philippines. From the statistics in question it appeared that, while our agricultural trade with Hawaii suffered a rather marked decline in 1902, there was a considerable increase in the amount of such business carried on with Porto Rico and with the Philippine Islands.

OFFICE OF PUBLIC ROAD INQUIRIES.

The work of this office has been prosecuted along the same general lines as heretofore, but its practical features have been enlarged. Object lesson and experimental road work have received more attention than ever before, and efforts along this line appear to be doing much to stimulate the building of better highways in many sections. Practical work in the testing of road materials has also been continued and enlarged. The field work of the Director, his assistant, and several road experts and special agents who attend and address conventions, consult with and advise road officials, and come in personal contact with the people of many communities, is another important feature of the practical work of the office which is producing excellent results.

Cooperation in Object Lesson Road Work.

The building of object-lesson and experimental roads has during the past year assumed a position of higher importance than ever before in the work of the office. Most of this work during the past year has been done in cooperation with several forces, each having a special interest in the improvement of the public highways. The first of these cooperating forces, the National Good Roads Association, was organized by public-spirited citizens to promote, by agitation and organization, the improvement of the public roads. Its work is educational in character, and one of its aims is to organize State and district associations. The second of these forces, the manufacturers of road-building machinery, contributes to the cooperative work the use of machines for building sample roads as well as experts to operate and explain this machinery. The third, one or another of the great railroad corporations, contributes the use of a train, popularly known as a "good-roads train," to carry from place to place along its lines the machinery and the representatives of all the cooperating forces. In this work the railroad corporations are actuated by a desire to develop the country tributary to their lines, particularly to secure the improvement of the roads over which commodities must be hauled to and from their stations. The Office of Public Road Inquiries of the Department constitutes the fourth cooperator. Its work is advisory, supervisory, and educational. The people of the various communities

in which conventions are held and sample roads built may be mentioned as a fifth cooperating force, and a very important one, since it is not only the principal recipient of the benefits, but must furnish the money, the materials, the common labor, and the horsepower needed in building the object-lesson roads.

The character of this cooperative work can best be indicated by briefly describing the work done in the South during the past autumn, winter, and spring. In October, 1901, the Southern Railway Company fitted up a good-roads train, consisting of a locomotive and 12 cars, which carried the representatives of all the cooperating forces and the road-building machinery furnished by five of the principal concerns that manufacture such machinery in the United States. The itinerary of this train extended through six States—Virginia, North and South Carolina, Tennessee, Alabama, and Georgia—and covered a distance of 4,037 miles, the whole campaign occupying over five months. Stops of a week or more were made at eighteen different places, at each of which a road convention was held and object-lesson and experimental road work was done.

This practical work included the improvement of earth roads, the building of gravel, chert, shell, sand-and-clay, and macadam roads, the object being to utilize local materials wherever possible and to illustrate the best methods of using them. Many thousands of people attended the sessions of these conventions and took lessons in practical road work. Addresses were delivered by many men of prominence in political, educational, and religious fields, as well as by scientific and practical road builders and representative farmers. Permanent good roads associations were organized in every State visited. It is believed that the work done has aroused a deep and permanent interest in road improvement in the States visited, and has started a movement for better roads that will ultimately yield results of inestimable value to the South. Plans for work of similar character in several Northwestern States have been matured and will be carried out during the current year.

Aside from the cooperative work just described, the Office has done much sample-road work in cooperation with State and county officials, educational institutions, and experiment stations. In this way sample roads have been built in four States: Maryland, West Virginia, Ohio, and North Carolina.

The demand for object-lesson road work of the character indicated is very great and comes from all sections. The Office has been able to comply with only a small part of the numerous requests for its active participation in the building of sample roads. During the coming year work of this kind will be extended as greatly as the force and means of the Office will justify. It should be remembered that this object-lesson work costs the Department nothing except the salaries

and expenses of its employees. In view of this fact and of its great practical value, the propriety of extending work of this kind seems apparent.

The road material laboratory is operated in collaboration with the Bureau of Chemistry, and its operations have already been discussed in connection with the work of that Bureau. The increasing demand for the services of this laboratory shows that its work is appreciated by practical road builders.

Special Agents.

The plan of dividing the whole country into four areas, known as the Eastern, Middle, Western, and Southern divisions, has been retained, but, owing to lack of funds, no special agents were appointed for the Eastern and Middle divisions. The special agents in the Western and Southern divisions have done a great deal of active field work, visiting different sections, attending and addressing conventions, collecting and disseminating information, and preparing and publishing matter on road subjects. It is expected that during the current year a special agent will be at work in each of the four divisions except the Eastern.

PUBLICATIONS.

Extent of Publication Work.

All the information acquired by this Department through its several bureaus and divisions by the means at its command finds its expression necessarily in the form of publications. The duty of issuing and distributing these publications is assigned to the Editor of the Department, under whose direction they are edited and prepared for the printer. The record of his work therefore accurately reflects the activity of the other Bureaus and Divisions of the Department. The statistics of publication work for the year, as reported by the Editor, show that in no previous year since the organization of the Department has this manifestation of activity in all the branches of the Department work been so apparent.

The total number of documents issued during the fiscal year was 757, of which 85 were publications of the Weather Bureau, and the total number of printed pages of new matter edited and prepared for the printer by the Division of Publications was 18,184. Counting pages of new matter, the increase in the matter edited during the year was 25 per cent over 1901 and 75 per cent over 1900. In spite of this unprecedented increase, there were in the hands of the Public Printer on June 30, 1902—the closing day of the fiscal year—112 miscellaneous publications, not including 47 Farmers' Bulletins.

Farmers' Bulletins.

Of Farmers' Bulletins, four-fifths of which are by law set aside for the use of Senators, Representatives, and Delegates, there were printed 6,150,000 copies, of which the Congressional distribution absorbed 4,289,126. While Senators, Representatives, and Delegates have failed to avail themselves of the full number of Farmers' Bulletins allotted to them, on the other hand, the number at the disposal of the Department has been inadequate.

Growth in the Publication Work.

The growth in the publication work of the Department during the past decade has been phenomenal. Every enlargement of the scope of the work of any one bureau or division, or the adoption by the Department of any new line of investigation or inquiry, inevitably brings about an increase in the work of publication. The development of the Department itself can therefore be accurately traced in the records of the Division of Publications.

Ten years ago the total appropriations for printing for this Department, including the salary roll of the Editor and his assistants, were less than $100,000. The total number of publications was 210, and the aggregate number of copies issued was 2,689,084. Last year the total appropriations for the same purposes exceeded $380,000; the number of publications issued was 757, and the aggregate number of copies 10,586,580. This increase, amounting to nearly 300 per cent in appropriations and number of copies issued and to over 250 per cent in the number of publications, obviously supplies an accurate measure of the growth and development of the Department itself.

Cost of the Department Printing.

The amount appropriated for printing for the use of this Department is, however, far from being the total amount expended for the publication work of the Department. The Yearbook and several other reports issued annually are paid for by special appropriations, and no session of Congress passes without special provision being made for the publication of several important reports for which the regular printing appropriation is inadequate. The cost of the publication work of the Department thus does not fall short of $800,000 a year, to say nothing of the fact that this enormous mass of published matter is carried free through the mails to all parts of this country, to Canada, and to Mexico, at an expense to the Government which can not be less than $200,000 yearly at the least.

The diffusion of the information acquired by the Department, therefore, represents an annual expenditure of about $1,000,000, a comparatively small per cent of the amount required to defray the total

expenses of the Department, but one, nevertheless, without which all the other expenses would be useless. A serious problem is presented by the fact that as the Department grows and becomes better known and its work more valuable and more highly appreciated, the demand for its publications increases even more rapidly than the supply, and with a constituency of over 10,000,000 workers on the 5,750,000 farms of the United States, of which probably not more than one-tenth are reached at present in anything like adequate measure by the publications of the Department, it is obvious that the demand upon us for published matter is bound to assume larger proportions, and, under the present system, to involve greater expense.

THE LIBRARY.

The work of the Department depends in a large measure upon an available collection of books relative to practical agriculture and to scientific experimentation at home and abroad. With this end in view the library has been increased from year to year until it now contains 75,000 volumes and pamphlets pertaining to the special lines of work carried on in the Department. As a working scientific library it is among the first, and as such is frequently made use of by scientists in distant parts of the country.

Accessions.

Each year some especially rare scientific works and many valuable sets of periodicals are added to the library, which are not available elsewhere in the country. With a larger appropriation more such works, in addition to current publications, could be procured to the great advantage of the public service.

The files of agricultural papers are particularly noteworthy, including representative publications from all parts of the world. This is one of the special collections most frequently consulted, and, in addition to its current value, it is a most important one as a source from which the progress of agriculture may be traced in future years. With few exceptions these publications are gifts from the publishers. Many gifts from scientific writers in the form of monographs and of reprints are also received, adding largely to the number and to the value of the annual accessions.

The most important source of accessions next to that by purchase is by exchange. The numerous publications of the Department are widely distributed to societies, universities, and other institutions of learning. In return for these, thousands of separate numbers of serial publications are received. The Library is the depository for all exchanges, that they may be systematically arranged and carefully preserved for the present and future benefit of the Department.

Technical Work.

The card catalogue is kept up to date. The last appropriation provided for an additional cataloguer to further this branch of the work. In addition to the card catalogue, a volume entitled "Catalogue of the Works relating to Botany in the Department Library" has been published. It is expected that two such catalogues of books on special subjects in the Library will be issued each year until a complete subject catalogue is thus printed.

The accessions bulletins have been published quarterly, as heretofore. Two additional bulletins, containing works relating to botany and to irrigation, respectively, have also been printed. The card index to the publications of the Department has been continued. The number of sets of the cards has been increased to meet the demands for the index from depository libraries.

Serial publications constitute so large a part of the accessions to the Library that it is necessary to devote much time and money to binding, both for the preservation of the volumes and for convenience in their use. The past year 1,300 volumes have been bound, and although this is the largest number recorded for any one year, it could well be doubled with advantage to the Library if funds permitted.

ESTIMATES AND APPROPRIATIONS.

The estimates for the fiscal year ending June 30, 1903, which were prepared in the Division of Accounts and Disbursements, were submitted to Congress through the Secretary of the Treasury with an explanation of all changes from the appropriation of the preceding year. These estimates amounted to $4,789,540, or $872,120 more than the appropriation for 1902. The amount finally appropriated for 1903 was $4,503,960. These amounts are exclusive of the $720,000 appropriated for the agricultural experiment stations, and the general printing expenses.

The statutory rolls of the Department increased from $533,640 in 1902 to $630,760 in 1903. This does not represent an actual increase either of salaries or clerical force, but was the result of the transfer to the statutory rolls, on the recommendation of the Agricultural Committees of both the Senate and House of Representatives, of clerks who have heretofore been paid from the lump-sum rolls of the Department.

During 1902 $12,600 was paid for the rent of buildings in the District of Columbia, and the appropriation for the same purpose for 1903 is $21,700.

OFFICE OF THE APPOINTMENT CLERK.

The records of this office show that on July 1, 1902, the total number of employees in the United States Department of Agriculture was 3,789, of which 1,209 were executive officers and administrative assistants, clerks, messengers, and watchmen; 2,081 scientists and scientific assistants, and 499 laborers and charwomen.

During the fiscal year ended June 30, 1902, the appointments made on certificates of the United States Civil Service Commission numbered 305, including 19 reinstatements and 19 transfers from other Departments. Thirty-five persons declined appointment on civil-service certificates. There were 108 resignations, 22 removals, and 14 deaths.

EXPOSITION WORK.

The Department of Agriculture, in connection with other Departments of the Government, has, in compliance with the law, participated in various expositions in this and foreign countries; and it is now preparing an exhibit for the Louisiana Purchase Exposition which is expected to be the best ever made by the Department.

It is not intended to make this an exhibit of agricultural products and resources, differing in that respect from exhibits prepared for expositions in foreign countries, where an effort has always been made to exhibit the products and resources of the country in the hope of increasing our trade abroad. It is expected that the articles and material exhibited at St. Louis will illustrate as nearly as possible the workings of the various Bureaus and Divisions of the Department, giving to the people who may not have an opportunity to visit the Department a chance to see what it is doing to promote the agricultural interests of the country.

The preparation of the Department exhibit devolves upon the heads of the several bureaus and divisions, under the general direction of the Assistant Secretary, Hon. J. H. Brigham, the representative of the Department on the Government board, and who has served on several previous occasions in the like capacity.

Since the elevation of the Department of Agriculture to executive rank, the President has honored it by naming its representative as the chairman of the Government board at the various expositions.

MAGNITUDE OF AGRICULTURAL INDUSTRY.

In the industrial progress made by the United States during recent years there has been no more conspicuous feature than the growth of agriculture. It is doubtful if the magnitude attained by our farming interests is generally known. According to the reports of the Twelfth Census, the fixed capital of agriculture, comprising the value of the land, buildings, and improvements, of implements and machinery, and of live stock, amounted in 1900 to about 20 billions of dollars, or four times the fixed capital invested in manufactures. During that year

there were nearly 5,740,000 farms in the United States, covering an area of 841 million acres, of which 415 million acres consisted of improved land. These farms had a total value of $16,675,000,000, exclusive of farming implements and live stock. Farm implements and machinery formed an item of 761 million dollars, while the value of the live stock on farms exceeded 3 billions of dollars.

As further indicating the importance of agriculture in the United States, it is a striking fact that, according to the returns of the last census, about 40 million people, or more than half of our total population in 1900, resided on farms. Of the 29 million persons comprising the portion of our population engaged in gainful occupations, about 10 million, or more than a third, were returned as employed in agricultural pursuits. The people that work upon the farm outnumber by more than 3 million persons those who are occupied in the manufacturing and mechanical pursuits.

In 1899, according to the census returns, the produce of American agriculture, including farm animals and their products, had an aggregate value of nearly 5 billion dollars. Some of the crop values that make up this total were almost startling in their size. The crop of indian corn, which formed the leading item, had a value of 828 million dollars. The hay and forage of the census year were worth 484 millions. Wheat, which ranks next to corn among our cereal crops, gave a return of 370 millions, while oats were produced to the value of 217 millions. Cotton, the great crop of the Southern States, was valued at 324 millions.

In addition to these foremost crops, there were numerous others yielding returns in value that ran into the millions. Live stock and their products formed an exceedingly important factor in the grand total. The animals sold and slaughtered during the year were valued at above 900 millions. The several products of the dairy—milk, butter, and cheese—comprised an item of 472 millions, while poultry and eggs together brought a return of over 281 millions.

As a result of the intelligent application of improved methods to American agriculture, the produce of our farms has enabled us to increase the volume of our exports every year. Products of agriculture form about two-thirds of our entire export trade. Last year the exports from the farm amounted to 860 millions of dollars. The science of agriculture is in rudimentary stages in all lands. The education of producers from the field, so long neglected, has recently been undertaken in earnest in the United States. Our Government is doing more for the farmer than all other nations combined. Results are justifying expenditures, and the future will still further show the value of science applied to the farm.

Respectfully submitted. JAMES WILSON, *Secretary.*

WASHINGTON, D. C., *November 29, 1902.*

INDEX.

Page.

Adjutant-General of the Army, report of the 306–348
Agricultural colleges 1196
Agricultural engineering 1209
Agriculture, report of the Secretary of 1105–1220
Alaska 971
  Experiment station 1199
  Land surveys 895
  Legislation for 25
  Operations of Army in 442
  Post-office affairs 582
  Salmon fisheries 55
  Seal herd 53
  Telegraph system 277
Animal Industry, Bureau of 1108
Apprentices in Navy 778
Arizona, affairs in 976
Armor for Navy 801
Army and Navy maneuvers 505–508
Army:
  Canteen 277
  Chaplains 343
  Clothing for 374
  Disposition of, in peace 249
  Distribution of 306–311
  Economy in 275
  Enlisted strength 233
  Enlistments 236
  Expenditures 279
  General staff 268–274
  Health of 425–432
  In China 311
  In Cuba 237
  In Philippines 242, 311
  Instruction in 336
  Insular service of all troops 325–335
  Maneuvers 267
  Maneuvers with Navy 344
  Militia 261–267
  Mortality and health 237
  New rifle 497
  Nurse corps 423
  Pay of 433
  Porto Rico regiment 235
  Recruiting service 339
  Shoes for 375
  Small arms 256
  Summary of service in Cuba and Philippines 244–249
  Surgeons 414
  Transports 382, 274
  Trials in 366
Assistant Attorney-General for the Post-Office Department, report of the 594–600
Attorney-General, report of the 545–570
Bank circulation 205
Banking, legislation needed 88–91
Banking power of the world 204

Page.
Banks, foreign 201
National 180–203
Savings 202
Biology, work of the Bureau of 1186
Bond-aided railroads 1096
Bonds:
Domestic holders 221
Foreign holders 219
For sinking fund 101
State, owned by the United States 82
Bounty lands 1065
Cable rates 472
Cannon, disposition of condemned 496
Casa Grande Ruin 1034
Cash balance 100
Cash in the Treasury 98
Cavite Naval Station 759
Census, report of the Director of the 1099–1104
The Twelfth 965
Chemistry, work of the Bureau of 1174
Chief Signal Officer of the Army, report of the 442–475
Chinese exclusion 62
Circulation and population 110
Coast and Geodetic Survey 75–77
Coinage, counterfeit 160
Of the United States 148
Subsidiary 87, 139
Commerce, Department of, need of 15
Commissary-General of the Army, report of the 389–410
Construction and Repair, report of the Chief of the Bureau of 820–835
Cotton-boll weevil 1180
Cotton-ginning inquiry 1102
Crater Lake, National Park 1027
Cuba:
Army in 450
History of inauguration of Government in 291–305
Military operations in 237
Treaty with 16
Currency 84–87
For the Philippines 126
Issued and redeemed 122
Report of the Comptroller of the 178–211
Customs, personal effects 52
District of Columbia finances 58
Education 941
Engineers, Report of the Chief of 482–494
Engraving and Printing, Bureau of 41
Equipment, report of the Chief of the Bureau of 761–768
Experiment stations, work of 1189
Farmers' institutions 1198
Field artillery 256
First Assistant Postmaster-General, report of the 600–630
Foreign banks 201
Foreign Commerce 49
Foreign fruit markets 1112
Foreign mails 585
Foreign markets, division of 1211
Forest investigation 1134
Forest reserves 903
Forestry, Bureau of 1132
Fortifications 486
Fourth Assistant Postmaster-General, report of the 684–716
Gathmann gun 496
General Land Office, report of the Commissioner of the 1051–1068
General staff 268–274

Page.
Geological Survey 950
Gold and silver deposits 147
Gold-bullion deposits 141
Gold certificates 111
Gold imports 172
Gold in the Treasury 110
Hall of Records 59
Hawaii, affairs in 982
Experiment station 1200
Hawaiian debt 83
Naval station 755
Hemp culture 1118
Hot Springs Reservation 1023
Immigration 60
Indian affairs 916
Report of the Commissioner of 1068–1080
Indians:
Education 918
Five Civilized Tribes 925
In Indian Territory 928–935
Land allotments 1072
Land 936
Rations of 919
Schools 1069
Tribal lands of 922
Insects imported 1177
Inspector-General of the Army, report of the 348–366
Interior, report of the Secretary of the 887–1050
Internal revenue 56
Receipts 229
Report of the Commissioner of 226–232
Irrigation 24, 912, 950–960
Investigation 1205
Laws 1207
Of Indian lands 1076
Isham shell 513
Isthmian canal 17
Isthmian canal bonds 49
Judge-Advocate-General of the Army, report of the 366–371
Judicial salaries 564
Labor and capital 14
Lands, Chippewa 913
Landsmen in Navy 779
Lands, public 890
Disposal of 1055
For educational purposes 1063
Homestead 1052
Receipts from sale of 1051
Life-Saving Service 80
Light-House Establishment 78
Loans and currency 47
Mail; increase of 614
Mail matter, classification of 587, 666
Second-class, abuses 588, 669–676
Mail, pneumatic-tube service 636
Mail routes 630
Mail service 631
Mail transportation 580
Cost of 653
Mail without stamps 680
Marine Corps 750
Report of the Commandant of the 874–886
Work in the Philippines 874–886
Maritime Canal Company of Nicaragua 1049
Medals of honor 480

Page
Metric system 78
Military colleges 357
Military education 257
Militia 336
Militia system 261–267
Minor coins 131
Mint, operations of 135
Report of the Director of the 135–178
Mint service 40
Monetary stock 107
Money in circulation 109
Money in the United States 176
Money-order business 578
Mount Rainier National Park 1026
National banking system 195–201
National-bank note, redemption of 128
National banks 43–47
Bonds and circulation 182–183
Circulation 205
Condition of 178
Extension of charters of 190
Insolvent 192
Loans and discounts 180
Organization of 183
Reserve 181
Shareholders of 186
Voluntary liquidation 187–190
National Bureau of Standards 77
National debt 47
National parks 1010–1018
National quarantine 63
Naval Academy 740
Naval colliers 777
Naval defense 775
Naval Hospital Corps 868
Naval stations 739
Foreign 754–761
San Juan 754
Naval supply fund 859
Navigation 71–74
Report of the Chief of the Bureau of 769–793
Navy:
Apprentices 778
Armor 801
Cost of 748
Delays on ships 801
Distribution of the fleet 769
Docks of 753
Enlisted men 737
Equipment of 744
Expenses of 857
Future of the 727
Gun batteries 794
Gunnery system 780
Health of 746
Increase of 21, 738
Landsmen 779
Legislation recommended 750
Liquid fuel 741, 838–844
Medical officers in 866
New vessels authorized 726
Officers needed 728
Officers on shore duty 732
Operations of the fleet 771–774
Ordnance 743
Pay Corps 858
Personnel 788–793

Navy—Continued. Page.
Powder ... 806
Report of the Secretary of the ... 717–751
Small arms ... 810
Speed of vessels ... 816
Vessels of the ... 720–725, 834
Vessels under construction ... 719, 823
Wireless telegraphy ... 763–765
Women nurses for ... 872
Work on Connecticut ... 829
New Mexico, affairs in ... 988
Notes, redemption of ... 98
Oklahoma ... 994
Ordnance, report of the Chief of, for the Army ... 494–514
Ordnance, report of the Chief of the Bureau of, Navy ... 793–820
Pacific cable ... 18, 472
Paper currency ... 121
Patent Office, work of ... 949
Patents, report of the Commissioner of ... 1080–1083
Paymaster-General of the Army, report of the ... 433–442
Paymaster-General of the Navy, report of the ... 857–863
Pension affairs ... 939
Pensions:
Applications for ... 1092
Cost of ... 1087
Disbursements ... 947
Number on roll ... 1084
Old pensioners ... 1086
On account of wars ... 1089
Report of the Commissioner of ... 1084–1094
Philippine Commission, report of the ... 514–520
Philippine Islands:
Bureau of posts ... 539
Civil government in ... 283–290
Combats in, since February 4, 1899 ... 313–316
Conditions in ... 19–21, 521
Constabulary ... 537
Currency ... 126
Friars' lands ... 519, 530
Government in ... 515
Labor question ... 527–530
Military operations in ... 242
Provincial governments ... 531
Report of the civil government of the ... 521–544
Scouts ... 236
Telegraphs in ... 457
Plant diseases ... 1114
Plant Industry, Bureau of ... 1111
Porto Rico:
Affairs in ... 1000–1005
Experiment Station ... 1202
Postage, new rate of ... 588, 676
Postal checks ... 579
Postal deficit ... 572
Postal estimates ... 571
Postal finances ... 656
Postal registry system ... 590
Postmaster-General, report of the ... 571–593
Postmasters appointed ... 685
Postmasters' salaries ... 602
Post-office:
Clerks, pay of ... 573
Extension ... 611
Frauds ... 592
Inspectors ... 704
Legislation needed ... 593

	Page.
Post-offices:	
Discontinued	687
Number of	693
Private	687
Powder for Navy	806
Prairie-dog scourge	1187
President, message of the	7–29
Prisoners of United States	560
Public buildings	58
Public debt	95
Public deposits	91
Public documents	968
Public health	63–69
Public lands	890
Grazing on	908
Surveys of	1066
Timber on	901
Unfawful fencing of	897
Public moneys	43
Public Road Inquiries, work of the Office of	1213
Quartermaster-General of the Army, report of the	372–389
Railroad affairs	969
Railroads:	
Bond-aided	1096
Earnings of	1095
Report of the Commissioner of	1095–1099
Railroad transportation	583
Railway Mail Service	584, 642
Receipts and expenditures	31–36
Record and Pension Office, report of the Chief of	475–482
Register of the Treasury, report of the	211–226
Reserve and trust funds	97
Revenue-Cutter Service	69
Personnel	70
Pensions	71
Vessels of	71
Revenues and expenditures, estimated	84
Revenues for 1904	36
Rural free delivery	574, 610
Rural schools, improvement of	1195
San Juan naval station	754
Savings banks of the world	202
Seacoast defenses	251
Second Assistant Postmaster-General, report of the	630–655
Secret Service	81
Seed distribution	1128
Siege artillery	502
Silk investigation	1185
Silver-bullion deposits	144
Silver dollars, distribution of	166
Silver, purchase of	162
Smuggling	53
Soils, Bureau of	1138
Spanish indemnity certificates	215
Stamp books	589
Steamboat-Inspection Service	74–75
Steam Engineering, report of the Chief of the Bureau of	836–856
Surgeon-General of the Army, report of the	410–432
Surgeon-General of the Navy, report of the	863–874
Tariff	12
Tea growing in the United States	1127
Third Assistant Postmaster-General, report of the	655–684
Tobacco investigation	1165
Treasurer, report of the	94–135
Treasury:	
Cash balance	
Cash in	

Treasury—Continued. Page.
Operations of the 37–40
Recommendations of the Secretary of the 92, 93
Report of the Secretary of the 31–93
Trust funds 133
Trust legislation needed 9–12
Tutuila naval station 756
Vessels of the Navy 72, 720–725, 834
Vessels on special service 775
Vessels under construction in Navy 719
War, report of the Secretary of 233–290
Weather Bureau 1106
White House, restoration of 29
Wireless telegraphy in Navy 763–765
Wireless telegraphy, Weather Bureau 1107
Yards and Docks, report of the Chief of the Bureau of 752–761
Yosemite National Park 1018

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